ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY

AIR QUALITY CLASS I PERMIT

COMPANY: *City of Flagstaff*
FACILITY: *Cinder Lake Landfill*
PERMIT #: *36194*
DATE ISSUED: ***Draft***
EXPIRY DATE:

SUMMARY

The Cinder Lake Landfill is owned and operated by the City of Flagstaff. The facility is located approximately 8 miles northeast of Flagstaff on Hwy 89 and Landfill Road in Coconino County, Arizona. Cinder Lake Landfill accepts approximately 122,000 megagrams of solid waste per year. The majority of this waste accepted is residential and commercial solid waste.

The primary activities of Cinder Lake Landfill are the transportation and deposition of refuse along with the excavation of cover material and soil. A defined area of the landfill is excavated and prepared to receive waste prior to acceptance of refuse. The early landfill areas that were filled are not lined but all expansion areas will be lined. The deposited waste is spread and compacted in the designated cell with a wheeled compactor. Cell construction will continue as a cut-and-fill operation, and compacted soil will be used for daily, intermediate, and final cover.

The natural decomposition of the waste materials, and to some extent the evaporation of volatile organic compounds (VOCs) in the waste materials, constitute the primary sources of emissions. The landfill gas (LFG) that is emitted from the landfill is fundamentally 50 percent methane (CH4) and 50 percent carbon dioxide (CO2), with a fraction containing non-methane organic compounds (NMOCs) and hazardous air pollutants (HAPs). Particulate matter (PM) emissions due to traffic on unpaved roads, application of a cover layer of soil, soil stockpiling, cover layer distribution, and wind erosion make up a significant amount of PM10 pollution.

Cinder Lake Landfill is subject to a number of regulatory requirements; the primary requirements consist of the following:

- New Source Performance Standards (40 CFR §60 Subpart WWW) apply to all landfills that started construction, modification, or began initial waste acceptance on or after May 30, 1991. Municipal Solid Waste landfills that meet the above criteria and exceed the maximum design capacity of 2.5 million megagrams must evaluate the amount of Non-Methane Organic Compounds (NMOCs) that is emitted on a megagram per year basis.

- National Emission Standard for Hazardous Air Pollutants (40 CFR §63 Subpart AAAA) requires a Startup, Shutdown and Malfunction (SSM) plan to be in place when the facility has a collection and control system in place.

- National Emission Standard for Hazardous Air Pollutants (40 CFR §61 Subpart M) requires that asbestos containing waste materials be properly identified, documented and handled.

- Stratospheric Ozone Protection Program (40 CFR §82 Subpart) requires the source to monitor the amount of Ozone depleting material that enters the landfill area and dispose of it in the proper manner, in compliance with the applicable requirements of 40 CFR §82 - Subpart F.

- Emissions from Existing and New Nonpoint Sources (A.A.C. R18-2-604 through 610) requires that the opacity of emissions from any nonpoint source shall not be greater than 40 percent.

All definitions, terms, and conditions used in this permit conform to those in the Arizona Administrative Code R18-2-101 et. seq. (A.A.C.) and 40 Code of Federal Regulations (CFR), except as otherwise defined in this permit. Unless noted otherwise, references cited in the permit conditions refer to the A.A.C. All terms and conditions of this permit are enforceable by the Administrator of the United States Environmental Protection Agency (U.S. EPA). This permit is issued in accordance with Title V of the Clean Air Act, and Title 49, Chapter 3 of the Arizona Revised Statutes.

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ATTACHMENT "A": GENERAL PROVISIONS

Air Quality Control Permit No. 36194
For
City of Flagstaff – Cinder Lake Landfill

I. PERMIT EXPIRATION AND RENEWAL [ARS § 49-426.F, A.A.C. R18-2-304.C.2, and -306.A.1]

A. This permit is valid for a period of five years from the date of issuance.

B. The Permittee shall submit an application for renewal of this permit at least 6 months, but not more than 18 months, prior to the date of permit expiration.

II. COMPLIANCE WITH PERMIT CONDITIONS [A.A.C. R18-2-306.A.8.a and b]

A. The Permittee shall comply with all conditions of this permit including all applicable requirements of the Arizona air quality statutes and air quality rules. Any permit noncompliance constitutes a violation of the Arizona Revised Statutes and is grounds for enforcement action; for permit termination, revocation and reissuance, or revision; or for denial of a permit renewal application. In addition, noncompliance with any federally enforceable requirement constitutes a violation of the Clean Air Act.

B. It shall not be a defense for a Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

III. PERMIT REVISION, REOPENING, REVOCATION AND REISSUANCE, OR TERMINATION FOR CAUSE

[A.A.C. R18-2-306.A.8.c, -321.A.1, and -321.A.2]

A. The permit may be revised, reopened, revoked and reissued, or terminated for cause. The filing of a request by the Permittee for a permit revision, revocation and reissuance, termination, or of a notification of planned changes or anticipated noncompliance does not stay any permit condition.

B. The permit shall be reopened and revised under any of the following circumstances

1. Additional applicable requirements under the Clean Air Act become applicable to the Class I source. Such a reopening shall only occur if there are three or more years remaining in the permit term. The reopening shall be completed no later than 18 months after promulgation of the applicable requirement. No such reopening is required if the effective date of the requirement is later than the date on which the permit is due to expire, unless an application for renewal has been submitted pursuant to A.A.C. R18-2-322.B. Any permit revision required pursuant to this subparagraph shall comply with the provisions in A.A.C. R18-2-322 for permit renewal and shall reset the five-year permit term.

2. Additional requirements, including excess emissions requirements, become applicable to an affected source under the acid rain program. Upon approval by

the Administrator, excess emissions offset plans shall be deemed to be incorporated into the Class I permit.

3. The Director or the Administrator determines that the permit contains a material mistake or that inaccurate statements were made in establishing the emissions standards or other terms or conditions of the permit.

4. The Director or the Administrator determines that the permit needs to be revised or revoked to assure compliance with the applicable requirements.

C. Proceedings to reopen and reissue a permit, including appeal of any final action relating to a permit reopening, shall follow the same procedures as apply to initial permit issuance and shall, except for reopenings under Condition III.B.1 above, affect only those parts of the permit for which cause to reopen exists. Such reopenings shall be made as expeditiously as practicable. Permit reopenings for reasons other than those stated in Condition III.B.1 above shall not result in a resetting of the five-year permit term.

IV. POSTING OF PERMIT [A.A.C. R18-2-315]

A. The Permittee shall post this permit or a certificate of permit issuance where the facility is located in such a manner as to be clearly visible and accessible. All equipment covered by this permit shall be clearly marked with one of the following:

1. Current permit number; or

2. Serial number or other equipment ID number that is also listed in the permit to identify that piece of equipment.

B. A copy of the complete permit shall be kept on site.

V. FEE PAYMENT [A.A.C. R18-2-306.A.9 and -326]

The Permittee shall pay fees to the Director pursuant to ARS § 49-426(E) and A.A.C. R18-2-326.

VI. ANNUAL EMISSION INVENTORY QUESTIONNAIRE [A.A.C. R18-2-327.A and B]

A. The Permittee shall complete and submit to the Director an annual emissions inventory questionnaire. The questionnaire is due by March 31st or ninety days after the Director makes the inventory form available each year, whichever occurs later, and shall include emission information for the previous calendar year.

B. The questionnaire shall be on a form provided by the Director and shall include the information required by A.A.C. R18-2-327.

VII. COMPLIANCE CERTIFICATION [A.A.C. R18-2-309.2.a, -309.2.c-d, and -309.5.d]

A. The Permittee shall submit a compliance certification to the Director semiannually, which describes the compliance status of the source with respect to each permit condition. The first certification shall be submitted no later than May 15th, and shall report the compliance status of the source during the period between October 1st of the previous

year and March 31st of the current year. The second certification shall be submitted no later than November 15th, and shall report the compliance status of the source during the period between April 1st and September 30th of the current year.

The compliance certifications shall include the following:

1. Identification of each term or condition of the permit that is the basis of the certification;

2. Identification of the methods or other means used by the Permittee for determining the compliance status with each term and condition during the certification period,

3. The status of compliance with the terms and conditions of this permit for the period covered by the certification, based on the methods or means designated in Condition VII.A.2 above. The certifications shall identify each deviation and take it into account for consideration in the compliance certification;

4. For emission units subject to 40 CFR Part 64, the certification shall also identify as possible exceptions to compliance any period during which compliance is required and in which an excursion or exceedance defined under 40 CFR Part 64 occurred;

5. All instances of deviations from permit requirements reported pursuant to Condition XII.B of this Attachment; and

6. Other facts the Director may require to determine the compliance status of the source.

B. A copy of all compliance certifications shall also be submitted to the EPA Administrator.

C. If any outstanding compliance schedule exists, a progress report shall be submitted with the semi-annual compliance certifications required in Condition VII.A above.

VIII. CERTIFICATION OF TRUTH, ACCURACY AND COMPLETENESS

[A.A.C. R18-2-304.H]

Any document required to be submitted by this permit, including reports, shall contain a certification by a responsible official of truth, accuracy, and completeness. This certification shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

IX. INSPECTION AND ENTRY

[A.A.C. R18-2-309.4]

Upon presentation of proper credentials, the Permittee shall allow the Director or the authorized representative of the Director to:

A. Enter upon the Permittee's premises where a source is located, emissions-related activity is conducted, or where records are required to be kept under the conditions of the permit;

B. Have access to and copy, at reasonable times, any records that are required to be kept under the conditions of the permit;

C. Inspect, at reasonable times, any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under the permit;

D. Sample or monitor, at reasonable times, substances or parameters for the purpose of assuring compliance with the permit or other applicable requirements; and

E. Record any inspection by use of written, electronic, magnetic and photographic media.

X. PERMIT REVISION PURSUANT TO FEDERAL HAZARDOUS AIR POLLUTANT STANDARD

[A.A.C. R18-2-304.C]

If this source becomes subject to a standard promulgated by the Administrator pursuant to Section 112(d) of the Act, then the Permittee shall, within twelve months of the date on which the standard is promulgated, submit an application for a permit revision demonstrating how the source will comply with the standard.

XI. ACCIDENTAL RELEASE PROGRAM

[40 CFR Part 68]

If this source becomes subject to the provisions of 40 CFR Part 68, then the Permittee shall comply with these provisions according to the time line specified in 40 CFR Part 68.

XII. EXCESS EMISSIONS, PERMIT DEVIATIONS, AND EMERGENCY REPORTING

A. Excess Emissions Reporting [A.A.C. R18-2-310.01.A and -310.01.B]

1. Excess emissions shall be reported as follows:

a. The Permittee shall report to the Director any emissions in excess of the limits established by this permit. Such report shall be in two parts as specified below:

(1) Notification by telephone or facsimile within 24 hours of the time when the Permittee first learned of the occurrence of excess emissions including all available information from Condition XII.A.1.b below.

(2) Detailed written notification by submission of an excess emissions report within 72 hours of the notification pursuant to Condition XII.A.1.a.(1) above.

b. The report shall contain the following information:

(1) Identity of each stack or other emission point where the excess emissions occurred;

(2) Magnitude of the excess emissions expressed in the units of the applicable emission limitation and the operating data and calculations used in determining the magnitude of the excess emissions;

(3) Date, time and duration, or expected duration, of the excess emissions;

(4) Identity of the equipment from which the excess emissions emanated;

(5) Nature and cause of such emissions;

(6) If the excess emissions were the result of a malfunction, steps taken to remedy the malfunction and the steps taken or planned to prevent the recurrence of such malfunctions; and

(7) Steps taken to limit the excess emissions. If the excess emissions resulted from start-up or malfunction, the report shall contain a list of the steps taken to comply with the permit procedures.

2. In the case of continuous or recurring excess emissions, the notification requirements of this section shall be satisfied if the source provides the required notification after excess emissions are first detected and includes in such notification an estimate of the time the excess emissions will continue. Excess emissions occurring after the estimated time period, or changes in the nature of the emissions as originally reported, shall require additional notification pursuant to Condition XII.A.1 above.

[A.A.C. R18-2-310.01.C]

B. Permit Deviations Reporting [A.A.C. R18-2-306.A.5.b]

The Permittee shall promptly report deviations from permit requirements, including those attributable to upset conditions as defined in the permit, the probable cause of such deviations, and any corrective actions or preventive measures taken. Prompt reporting shall mean that the report was submitted to the Director by certified mail, facsimile, or hand delivery within two working days of the time when emission limitations were exceeded due to an emergency or within two working days of the time when the owner or operator first learned of the occurrence of a deviation from a permit requirement.

C. Emergency Provision [A.A.C. R18-2-306.E]

1. An "emergency" means any situation arising from sudden and reasonable unforeseeable events beyond the control of the source, including acts of God, that require immediate corrective action to restore normal operation, and that causes the source to exceed a technology-based emission limitation under the permit, due to unavoidable increases in emissions attributable to the emergency. An emergency shall not include noncompliance to the extent caused by improperly

designed equipment, lack of preventative maintenance, careless or improper operation, or operator error.

2. An emergency constitutes an affirmative defense to an action brought for noncompliance with such technology-based emission limitations if Condition XII.C.3 is met.

3. The affirmative defense of emergency shall be demonstrated through properly signed, contemporaneous operating logs, or other relevant evidence that:

a. An emergency occurred and that the Permittee can identify the cause(s) of the emergency;

b. The permitted facility was being properly operated at the time;

c. During the period of the emergency, the Permittee took all reasonable steps to minimize levels of emissions that exceeded the emissions standards or other requirements in the permit; and

d. The Permittee submitted notice of the emergency to the Director by certified mail, facsimile, or hand delivery within two working days of the time when emission limitations were exceeded due to the emergency. This notice shall contain a description of the emergency, any steps taken to mitigate emissions, and corrective action taken.

4. In any enforcement proceeding, the Permittee seeking to establish the occurrence of an emergency has the burden of proof.

5. This provision is in addition to any emergency or upset provision contained in any applicable requirement.

D. Compliance Schedule [ARS § 49-426.I.5]

For any excess emission or permit deviation that cannot be corrected with 72 hours, the Permittee is required to submit a compliance schedule to the Director within 21 days of such occurrence. The compliance schedule shall include a schedule of remedial measures, including an enforceable sequence of actions with milestones, leading to compliance with the permit terms or conditions that have been violated.

E. Affirmative Defenses for Excess Emissions Due to Malfunctions, Startup, and Shutdown [A.A.C. R18-2-310]

1. Applicability

This rule establishes affirmative defenses for certain emissions in excess of an emission standard or limitation and applies to all emission standards or limitations except for standards or limitations:

a. Promulgated pursuant to Sections 111 or 112 of the Act;

b. Promulgated pursuant to Titles IV or VI of the Clean Air Act;

c. Contained in any Prevention of Significant Deterioration (PSD) or New Source Review (NSR) permit issued by the U.S. EPA;

d. Contained in A.A.C. R18-2-715.F; or

e. Included in a permit to meet the requirements of A.A.C. R18-2-406.A.5.

2. Affirmative Defense for Malfunctions

Emissions in excess of an applicable emission limitation due to malfunction shall constitute a violation. When emissions in excess of an applicable emission limitation are due to a malfunction, the Permittee has an affirmative defense to a civil or administrative enforcement proceeding based on that violation, other than a judicial action seeking injunctive relief, if the Permittee has complied with the reporting requirements of A.A.C. R18-2-310.01 and has demonstrated all of the following:

a. The excess emissions resulted from a sudden and unavoidable breakdown of process equipment or air pollution control equipment beyond the reasonable control of the Permittee;

b. The air pollution control equipment, process equipment, or processes were at all times maintained and operated in a manner consistent with good practice for minimizing emissions;

c. If repairs were required, the repairs were made in an expeditious fashion when the applicable emission limitations were being exceeded. Off-shift labor and overtime were utilized where practicable to ensure that the repairs were made as expeditiously as possible. If off-shift labor and overtime were not utilized, the Permittee satisfactorily demonstrated that the measures were impracticable;

d. The amount and duration of the excess emissions (including any bypass operation) were minimized to the maximum extent practicable during periods of such emissions;

e. All reasonable steps were taken to minimize the impact of the excess emissions on ambient air quality;

f. The excess emissions were not part of a recurring pattern indicative of inadequate design, operation, or maintenance;

g. During the period of excess emissions there were no exceedances of the relevant ambient air quality standards established in Title 18, Chapter 2, Article 2 of the Arizona Administrative Code that could be attributed to the emitting source;

h. The excess emissions did not stem from any activity or event that could have been foreseen and avoided, or planned, and could not have been avoided by better operations and maintenance practices;

i. All emissions monitoring systems were kept in operation if at all practicable; and

j. The Permittee's actions in response to the excess emissions were documented by contemporaneous records

3. Affirmative Defense for Startup and Shutdown

a. Except as provided in Condition XII.E.3.b below, and unless otherwise provided for in the applicable requirement, emissions in excess of an applicable emission limitation due to startup and shutdown shall constitute a violation. When emissions in excess of an applicable emission limitation are due to startup and shutdown, the Permittee has an affirmative defense to a civil or administrative enforcement proceeding based on that violation, other than a judicial action seeking injunctive relief, if the Permittee has complied with the reporting requirements of A.A.C. R18-2-310.01 and has demonstrated all of the following:

(1) The excess emissions could not have been prevented through careful and prudent planning and design;

(2) If the excess emissions were the result of a bypass of control equipment, the bypass was unavoidable to prevent loss of life, personal injury, or severe damage to air pollution control equipment, production equipment, or other property;

(3) The air pollution control equipment, process equipment, or processes were at all times maintained and operated in a manner consistent with good practice for minimizing emissions;

(4) The amount and duration of the excess emissions (including any bypass operation) were minimized to the maximum extent practicable during periods of such emissions;

(5) All reasonable steps were taken to minimize the impact of the excess emissions on ambient air quality;

(6) During the period of excess emissions there were no exceedances of the relevant ambient air quality standards established in Title 18, Chapter 2, Article 2 of the Arizona Administrative Code that could be attributed to the emitting source;

(7) All emissions monitoring systems were kept in operation if at all practicable; and

(8) Contemporaneous records documented the Permittee's actions in response to the excess emissions.

b. If excess emissions occur due to a malfunction during routine startup and shutdown, then those instances shall be treated as other malfunctions subject to Condition XII.E.2 above.

4. Affirmative Defense for Malfunctions during Scheduled Maintenance

If excess emissions occur due to a malfunction during scheduled maintenance, then those instances will be treated as other malfunctions subject to Condition XII.E.2 above.

5. Demonstration of Reasonable and Practicable Measures

For an affirmative defense under Condition XII.E.2 or XII.E.3 above, the Permittee shall demonstrate, through submission of the data and information required by Condition XII.E and A.A.C. R18-2-310.01, that all reasonable and practicable measures within the Permittee's control were implemented to prevent the occurrence of the excess emissions.

XIII. RECORD KEEPING REQUIREMENTS [A.A.C. R18-2-306.A.4]

A. The Permittee shall keep records of all required monitoring information including, but not limited to, the following:

1. The date, place as defined in the permit, and time of sampling or measurements;

2. The date(s) analyses were performed;

3. The name of the company or entity that performed the analyses;

4. A description of the analytical techniques or methods used;

5. The results of such analyses; and

6. The operating conditions as existing at the time of sampling or measurement.

B. The Permittee shall retain records of all required monitoring data and support information for a period of at least 5 years from the date of the monitoring sample, measurement, report, or application. Support information includes all calibration and maintenance records and all original strip-chart recordings or other data recordings for continuous monitoring instrumentation, and copies of all reports required by the permit.

C. All required records shall be maintained either in an unchangeable electronic format or in a handwritten logbook utilizing indelible ink.

XIV. REPORTING REQUIREMENTS [A.A.C. R18-2-306.A.5.a]

The Permittee shall submit the following reports:

A. Compliance certifications in accordance with Section VII of Attachment "A".

B. Excess emission; permit deviation, and emergency reports in accordance with Section XII of Attachment "A".

C. Other reports required by any condition of Attachment "B".

XV. DUTY TO PROVIDE INFORMATION [A.A.C. R18-2-304.G and -306.A.8.e]

A. The Permittee shall furnish to the Director, within a reasonable time, any information that the Director may request in writing to determine whether cause exists for revising, revoking and reissuing, or terminating the permit, or to determine compliance with the permit. Upon request, the Permittee shall also furnish to the Director copies of records required to be kept by the permit. For information claimed to be confidential, the Permittee shall furnish an additional copy of such records directly to the Administrator along with a claim of confidentiality.

B. If the Permittee has failed to submit any relevant facts or has submitted incorrect information in the permit application, the Permittee shall, upon becoming aware of such failure or incorrect submittal, promptly submit such supplementary facts or corrected information.

XVI. PERMIT AMENDMENT OR REVISION [A.A.C. R18-2-318, -319, and -320]

The Permittee shall apply for a permit amendment or revision for changes to the facility which do not qualify for a facility change without revision under Section XVII, as follows:

A. Administrative Permit Amendment (A.A.C. R18-2-318);

B. Minor Permit Revision (A.A.C. R18-2-319); and

C. Significant Permit Revision (A.A.C. R18-2-320)

The applicability and requirements for such action are defined in the above referenced regulations.

XVII. FACILITY CHANGE WITHOUT A PERMIT REVISION [A.A.C. R18-2-306.A.4 and -317]

A. The Permittee may make changes at the permitted source without a permit revision if all of the following apply:

1. The changes are not modifications under any provision of Title I of the Act or under ARS § 49-401.01(19);

2. The changes do not exceed the emissions allowable under the permit whether expressed therein as a rate of emissions or in terms of total emissions;

3. The changes do not violate any applicable requirements or trigger any additional applicable requirements;

4. The changes satisfy all requirements for a minor permit revision under A.A.C. R18-2-319.A; and

5. The changes do not contravene federally enforceable permit terms and conditions that are monitoring (including test methods), record keeping, reporting, or compliance certification requirements.

B. The substitution of an item of process or pollution control equipment for an identical or substantially similar item of process or pollution control equipment shall qualify as a change that does not require a permit revision, if it meets all of the requirements of Conditions XVII.A and XVII.C of this Attachment.

C. For each change under Conditions XVII.A and XVII.B above, a written notice by certified mail or hand delivery shall be received by the Director and the Administrator a minimum of 7 working days in advance of the change. Notifications of changes associated with emergency conditions, such as malfunctions necessitating the replacement of equipment, may be provided less than 7 working days in advance of the change, but must be provided as far in advance of the change as possible or, if advance notification is not practicable, as soon after the change as possible.

D. Each notification shall include:

1. When the proposed change will occur;

2. A description of the change;

3. Any change in emissions of regulated air pollutants; and

4. Any permit term or condition that is no longer applicable as a result of the change.

E. The permit shield described in A.A.C. R18-2-325 shall not apply to any change made under this Section, other than implementation of an alternate to Conditions XVII.A and XVII.B above.

F. Except as otherwise provided for in the permit, making a change from one alternative operating scenario to another as provided under A.A.C. R18-2-306.A.11 shall not require any prior notice under this Section.

G. Notwithstanding any other part of this Section, the Director may require a permit to be revised for any change that, when considered together with any other changes submitted by the same source under this Section over the term of the permit, do not satisfy Condition XVII.A above.

XVIII. TESTING REQUIREMENTS [A.A.C. R18-2-312]

A. The Permittee shall conduct performance tests as specified in the permit and at such other times as may be required by the Director.

B. Operational Conditions during Testing

Tests shall be conducted during operation at the maximum possible capacity of each unit under representative operational conditions unless other conditions are required by the applicable test method or in this permit. With prior written approval from the Director, testing may be performed at a lower rate. Operations during periods of start-up, shutdown, and malfunction (as defined in A.A.C. R18-2-101) shall not constitute representative operational conditions unless otherwise specified in the applicable standard.

C. Tests shall be conducted and data reduced in accordance with the test methods and procedures contained in the Arizona Testing Manual unless modified by the Director pursuant to A.A.C. R18-2-312.B.

D. Test Plan

At least 14 calendar days prior to performing a test, the Permittee shall submit a test plan to the Director in accordance with A.A.C. R18-2-312.B and the Arizona Testing Manual. This test plan must include the following:

1. Test duration;

2. Test location(s);

3. Test method(s); and

4. Source operation and other parameters that may affect test results.

E. Stack Sampling Facilities

The Permittee shall provide, or cause to be provided, performance testing facilities as follows:

1. Sampling ports adequate for test methods applicable to the facility;

2. Safe sampling platform(s);

3. Safe access to sampling platform(s); and

4. Utilities for sampling and testing equipment.

F. Interpretation of Final Results

Each performance test shall consist of three separate runs using the applicable test method. Each run shall be conducted for the time and under the conditions specified in the applicable standard. For the purpose of determining compliance with an applicable standard, the arithmetic mean of the results of the three runs shall apply. In the event that a sample is accidentally lost or conditions occur in which one of the three runs is required to be discontinued because of forced shutdown, failure of an irreplaceable portion of the sample train, extreme meteorological conditions, or other circumstances beyond the Permittee's control, compliance may, upon the Director's approval, be determined using the arithmetic mean of the results of the other two runs. If the Director or the Director's

designee is present, tests may only be stopped with the Director's or such designee's approval. If the Director or the Director's designee is not present, tests may only be stopped for good cause. Good cause includes: forced shutdown, failure of an irreplaceable portion of the sample train, extreme meteorological conditions, or other circumstances beyond the Permittee's control. Termination of any test without good cause after the first run is commenced shall constitute a failure of the test. Supporting documentation, which demonstrates good cause, must be submitted.

G. Report of Final Test Results

A written report of the results of all performance tests shall be submitted to the Director within 30 days after the test is performed. The report shall be submitted in accordance with the Arizona Testing Manual and A.A.C. R18-2-312.A.

XIX. PROPERTY RIGHTS [A.A.C. R18-2-306.A.8.d]

This permit does not convey any property rights of any sort, or any exclusive privilege.

XX. SEVERABILITY CLAUSE [A.A.C. R18-2-306.A.7]

The provisions of this permit are severable. In the event of a challenge to any portion of this permit, or if any portion of this permit is held invalid, the remaining permit conditions remain valid and in force.

XXI. PERMIT SHIELD [A.A.C. R18-2-325]

Compliance with the conditions of this permit shall be deemed compliance with all applicable requirements identified in the portions of this permit subtitled "Permit Shield". The permit shield shall not apply to minor revisions pursuant to Condition XVI.B of this Attachment and any facility changes without a permit revision pursuant to Section XVII of this Attachment.

XXII. PROTECTION OF STRATOSPHERIC OZONE [40 CFR Part 82]

If this source becomes subject to the provisions of 40 CFR Part 82, then the Permittee shall comply with these provisions accordingly.

ATTACHMENT "B": SPECIFIC CONDITIONS

Air Quality Control Permit No. 36194
For
City of Flagstaff – Cinder Lake Landfill

I. FACILITY-WIDE REQUIREMENTS

A. The Permittee shall have on staff a person that is certified in EPA Reference Method 9.

[A.A.C. R18-2-306.A.3]

B. At the time the compliance certifications required by Section VII of Attachment "A" are submitted, the Permittee shall submit reports of all monitoring and recordkeeping activities required by this Attachment during the period for which the compliance certifications are submitted.

[A.A.C. R18-2-306.A.5.a]

II. NON-METHANE ORGANIC COMPOUNDS (NMOC)

The Permittee shall either install and operate a collection and control system in accordance with Section III, or calculate the NMOC mass emission rate according to the following procedures.

A. The Permittee shall calculate the NMOC emission rate using one of the equations provided below and proceed to a Tier 1 analysis;

1. For sites with known actual year-to-year solid waste acceptance rate,

$$M_{NMOC} = \Sigma\ 2kL_oM_i\ (e^{-kt}i)(C_{NMOC})(3.6x10^{-9})$$

where

M_{NMOC} = Total NMOC emission rate from the landfill, Mg/yr
k = Methane generation rate constant, $years^{-1}$
L_o = Methane generation rate potential, cubic meters per megagram solid waste
M_i = Mass of solid waste in the i^{th} section, megagrams
t_i = Age of the i^{th} section, years
C_{NMOC} = Concentration of the NMOC, parts per million by volume (ppmv) as hexane
$3.6x10^{-9}$ = Conversion factor

Note - The mass of nondegradable solid waste may be subtracted from the total mass of solid waste in a particular section of the landfill when calculating the value for M_i if documentation of the nature and amount of such wastes is maintained.

[40 CFR §60.754(a)(1)(i)]

2. For sites with unknown actual year-to-year solid waste acceptance rate,

$M_{NMOC} = 2L_oR(e^{-kc} - e^{-kt})(C_{NMOC})(3.6x10^{-9})$

where

M_{NMOC} = Total NMOC emission rate from the landfill, Mg/yr
L_0 – Methane generation rate potential, cubic meters per megagram solid waste
R = Average annual acceptance rate, Mg/yr
k = Methane generation rate constant, $year^{-1}$
t = Age of the landfill, years
c = time since closure, years. For active landfill, c=0 and $e^{-kc} = 1$
C_{NMOC} = concentration of the NMOC, ppmv as hexane
$3.6x10^{-9}$ = Conversion factor

Note - The mass of nondegradable solid waste may be subtracted from the total mass of solid waste in a particular section of the landfill when calculating the value for M_i if documentation of the nature and amount of such wastes is maintained.

[40 CFR §60.754(a)(1)(ii)]

3. The Permittee shall calculate the NMOC emission rate using the equation(s) in Paragraphs A.1 or A.2 of this Section with the following default values:

k	=	0.02 /yr for arid region
L_O	=	170 m^3/Mg
C_{NMOC}	=	4000 ppmv

[40 CFR §60.754(a)(1)]

B. Tier 1

1. The Permittee shall compare the calculated NMOC emission rate to the standard of 50 Mg/yr.

[40 CFR §60.754(a)(2)]

2. If the NMOC emission rate calculated in the Tier 1 analysis is less than 50 Mg/yr, then the Permittee shall submit an emission rate report as per Section II.G.2, and shall recalculate the NMOC mass emission rate annually as required under §60.752(b)(1).

[40 CFR §60.754(a)(2)(i)]

3. If the NMOC emission rate calculated in the Tier 1 analysis is equal to or greater than 50 Mg/yr, then the Permittee shall either determine a site-specific NMOC concentration and recalculate the NMOC emission rate using the Tier 2 procedure or install and operate a collection and control system according to Section III.

[40 CFR §60.754(a)(2)(ii)]

C. Tier 2

1. The Tier 2 procedure consists of determining a site specific NMOC concentration (C_{NMOC}) using the sampling procedure specified in 40 CFR §60.754.a.3 and

recalculating the NMOC emissions rate. The Permittee shall recalculate the NMOC mass emission rate using the equations provided in Section II.A and use the average NMOC concentration from the collected samples instead of the default value listed in II.A.3.

[40 CFR §60.754(a)(3)] & [40 CFR §60.754(a)(3)(i)]

2. If the resulting NMOC mass emission rate is less than 50 Mg/yr, then the Permittee shall submit a periodic estimate of the emission rate report as per Section II.G.2 and retest the site-specific NMOC concentration every 5 years using the methods specified in Section II.C.1, above.

[40 CFR §60.754(a)(3)(iii)]

3. If the resulting NMOC mass emission rate is equal to or greater than 50 Mg/yr, then the Permittee shall either determine the site-specific methane generation rate constant and recalculate the NMOC emission rate using the Tier 3 procedure or install and operate a collection and control system according to Section III.

[40 CFR §60.754(a)(3)(ii)]

D. Tier 3

1. The Tier 3 procedure consists of determining the site specific methane generation constant, k, and recalculating the NMOC emissions rate using the site specific methane generation constant. The site-specific methane generation constant shall be determined using the procedure provided in Method 2E of appendix A of the 40 CFR §60. The Permittee shall calculate the NMOC mass emission rate using the appropriate equation in Section II.A, using the site-specific methane generation rate constant k, and the site-specific NMOC concentration as determined in the Tier 2 analysis instead of the default values provided in II.A.3. The Permittee shall compare the resulting NMOC mass emission rate to the standard of 50 Mg/yr.

[40 CFR §60.754(a)(4)]

2. If the NMOC mass emission rate is less than 50 Mg/yr, then the Permittee shall submit a periodic emission rate report as per section II.G.2 and shall recalculate the NMOC mass emission rate annually using the equations in Section II.A, the NMOC concentration obtained in the Tier 2 analysis, and the site-specific methane generation rate constant obtained in the Tier 3 analysis. The methane generation rate constant calculation is performed only once, and the value obtained from this test shall be used in all subsequent annual NMOC emission rate calculations.

[40 CFR §60.754(a)(4)(ii)]

3. If the NMOC mass emission rate as calculated using the site-specific methane generation rate and the site specific NMOC concentration is equal to or greater than 50 Mg/yr, then the Permittee shall install and operate a collection and control system according to Section III.

[40 CFR §60.754(a)(4)(i)]

E. Alternative Methods

Upon the Director's approval, the Permittee may use other methods to determine the NMOC concentration or a site-specific methane generation rate constant as an alternative to the methods required under Tier 2 or Tier 3.

[40 CFR §60.754(a)(5)]

F. Recordkeeping Requirements

Except as provided in Section III.A.1.a,

1. The Permittee shall keep for at least 5 years up-to-date, readily accessible, on-site records of the design capacity report, the current amount of solid waste in-place, and the year-to-year waste acceptance rate. Off-site records may be maintained if they are retrievable within 4 hours. Either paper copy or electronic formats are acceptable.

[40 CFR §60.758(a)]

2. If the Permittee converts the design capacity from volume to mass or mass to volume to demonstrate that landfill design capacity is less than 2.5 million megagrams or 2.5 million cubic meters, as provided in the definition of "design capacity," then the Permittee shall keep readily accessible, on-site records of the annual recalculation of the site-specific density, design capacity, and the supporting documentation. Offsite records may be maintained if they are retrievable within 4 hours. Either paper copy or electronic formats are acceptable.

[40 CFR §60.758(f)]

G. Reporting Requirements

Except as provided in Section III.A.1.a,

1. The Permittee shall submit an initial design capacity report to the Director.

[40 CFR §60.757(a)]

a. The initial design capacity report shall fulfill the requirements of the notification of the date construction is commenced as required by 40 CFR §60.7(a)(1) and shall be submitted no later than ninety days after the date of commenced construction, modification, or reconstruction for landfills that commenced construction, modification, or reconstruction on or after March 12, 1996.

[40CFR§60.757(a)(1)]

b. The initial design capacity report shall contain the following information:

[40 CFR §60.757(a)(2)]

i. A map or a plot of the landfill, providing the size and location of the landfill and identifying all areas where solid waste may be landfilled.

[40 CFR §60.757(a)(2)(i)]

ii The maximum design capacity of the landfill. The calculations

shall be provided, along with the relevant parameters as part of the report. The Director may request other reasonable information as may be necessary to verify the maximum design capacity of the landfill.

[40 CFR §60.757(a)(2)(ii)]

iii. An amended design capacity report shall be submitted to the Director providing notification of any increase in the design capacity of the landfill, within 90 days of an increase in the maximum design capacity of the landfill to or above 2.5 million megagrams or 2.5 million cubic meters. This increase in design capacity may result from an increase in the permitted volume of the landfill or an increase in the density as documented in the annual recalculation required in Section II.G.2.

[40 CFR §60.757(a)(3)]

2. The Permittee shall submit an NMOC emission rate report to the Director initially and annually thereafter, except as provided in Sections II.G.2.a.ii and III.F.1 below. The Director may request such additional information as may be necessary to verify the reported NMOC emission rate.

[40 CFR §60.757(b)]

a. The NMOC emission rate report shall contain an annual or 5-year estimate of the NMOC emission rate calculated using the formulas and procedures provided in this Section.

[40 CFR §60.757(b)(1)]

i. The initial NMOC emission rate report may be combined with the initial design capacity report required in section II.G.1 and shall be submitted no later than indicated in sections II.G.2.a.i(a) and (b)

(a). Subsequent NMOC emission rate reports shall be submitted annually thereafter, except as provided for in sections II.G.2.a.ii and III.F.1.

[40 CFR §60.757(b)(1)(i)]

(b) Ninety days after the date of commenced construction, modification, or reconstruction on or after March 12, 1996.

[40 CFR §60.757(b)(1)(i)(B)]

ii. If the estimated NMOC emission rate as reported in the annual report to the Director is less than 50 Mg/yr in each of the next 5 consecutive years, then the Permittee may elect to submit an estimate of the NMOC emissions rate for the next 5 year period in lieu of the annual report. This estimate shall include the current amount of solid waste-in-place and the estimated waste acceptance rate for each year of the 5 years for which an NMOC emission rate is estimated. All data and calculations upon which

this estimate is based shall be provided to the Director. This estimate shall be revised at least once every 5 years. If the actual waste acceptance rate exceeds the estimated waste acceptance rate in any year reported in the 5 year estimate, a revised 5 year estimate shall be submitted to the Director. The revised estimate shall cover the 5 year period beginning with the year in which the actual waste acceptance rate exceeded the estimated waste acceptance rate.

[40 CFR §60.757(b)(1)(ii)]

b. The NMOC emission rate report shall include all the data, calculations, sample reports and measurements used to estimate the annual or 5-year emissions.

[40 CFR §60.757(b)(2)]

H. Permit Shield

Compliance with Section II shall be deemed compliance with the following applicable requirements as of the issuance date of this permit: 40 CFR §60.754(a)(1) through (a)(5), 40 CFR §60.757(a), (b)(1) and (b)(2), and 40 CFR §60.758(a) and (f).

[A.A.C. R18-2-325]

III. COLLECTION AND CONTROL SYSTEM

A. Installation Standards

If the NMOC emission rate is equal to or greater than 50 Mg/yr, then the Permittee shall install, maintain and operate a collection and control system according to the following standards.

1. The Permittee shall:

a. Submit a collection and control system design plan prepared by a professional engineer to the Director within 1 year of determining the NMOC emission rate $\geq$ 50 Mg/yr:

i. The collection and control system as described in the plan shall meet the design requirements of Section III.A.1.b.

ii. The collection and control system design plan shall include any alternatives to the operational standards, test methods, compliance provisions, monitoring, recordkeeping or reporting provisions of this permit proposed by the Permittee.

iii. The collection and control system design plan shall either conform with the specifications in Section III.B for an active collection system or include a demonstration to the Director's satisfaction of the sufficiency of any alternative provision to Section III.B.

iv. The Director shall review the information submitted in the above paragraphs of this section and either approve it, disapprove it, or request that additional information be submitted.

[40 CFR §60.752(b)(2)(i)]

b. Install a collection and control system that captures the gas generated within the landfill as required in sections III.A.1.b.i or ii, and section III.A.1.c within 30 months after the first annual report in which the emission rate equals or exceeds 50 Mg/yr, unless Tier 2 or Tier 3 sampling demonstrates that the emission rate is less than 50 Mg/yr.

[40 CFR§60.752(b)(2)(ii)]

i. An active collection system shall:

(a) Be designed to handle the maximum expected gas flow rate from the entire area of the landfill that warrants control over the intended use period of the gas control or treatment system equipment;

(b) Collect gas from each area, cell, or group of cells in the landfill in which the initial solid waste has been in place for a period of:

(i) 5 years or more if active; or

(ii) 2 years or more if closed or at final grade;

(c) Collect gas at a sufficient extraction rate; and

(d) Be designed to minimize off-site migration of subsurface gas.

[40 CFR §60.752(b)(2)(ii)(A)]

ii. A passive collection system shall:

(a) Comply with the provisions specified in Sections III.A.1.b.i(a), (b), and (d), and

(b) Be installed with liners on the bottom and all sides in all areas in which gas is to be collected. The liners shall be installed as required under 40 CFR §258.40.

[40 CFR §60.752(b)(2)(ii)(B)]

c. Route all the collected gas to a control system that complies with one of the following:

i. An open flare designed and operated in accordance with 40 CFR §60.18, or

ii. A control system designed and operated to reduce NMOC by 98

weight percent, or, when an enclosed combustion device is used for control, to either reduce NMOC by 98 weight percent or reduce the outlet NMOC concentration to less than 20 ppmv, dry basis as hexane at 3 percent oxygen. The reduction efficiency or ppmv shall be established by an initial performance test to be completed no later than 180 days after the initial startup of the approved control system using the test methods specified in III.A.1.e.

(a) If a boiler or process heater is used as the control device, the landfill gas stream shall be introduced into the flame zone.

(b) The control device shall be operated within the parameter ranges established during the initial or most recent performance test. The operating parameters to be monitored are specified in Section III.D, or

iii. A treatment system that processes the collected gas for subsequent sale or use. All emissions from any atmospheric vent from the gas treatment system shall be subject to requirements of Sections III.A.1.c.i or ii above.

[40 CFR §60.752(b)(2)(iii)]

d. Operate the installed collection and control device to comply with Sections III.A.3, III.B, and III.C of this Section.

[40 CFR §60.752(b)(2)(iv)]

e. For the performance test required in III.A.1.c.2, Method 25, 25C, or Method 18 of Appendix A of 40 CFR § 60 must be used to determine compliance with the 98-weight-percent efficiency or the 20 ppmv outlet concentration level, unless another method to demonstrate compliance has been approved by the Director as provided in III.A.1.a.iv. Method 3 or 3A shall be used to determine oxygen for correcting the NMOC concentration as hexane to 3 percent. In cases where the outlet concentration is less than 50 ppm NMOC as carbon (8 ppm NMOC as hexane), Method 25A should be used in place of Method 25. If using Method 18 of Appendix A of 40 CFR §60, the minimum list of compounds to be tested shall be those published in the most recent Compilation of Air Pollutant Emission Factors (AP-42). The following equation shall be used to calculate efficiency:

$$\text{Control Efficiency} = (NMOC_{in} - NMOC_{out})/(NMOC_{in})$$

where

$NMOC_{in}$ = mass of NMOC entering control device
$NMOC_{out}$ = mass of NMOC exiting control device

[40 CFR §60.754(d)]

2. Removal Standards

The collection and control device may be capped or removed provided that all the following conditions are met:

a. The landfill shall be a closed landfill as defined in 40 CFR § 60.751. A closure report shall be submitted to the Director as provided in section III.F.6.

b. The collection and control system shall have been in operation a minimum of 15 years; and

c. Following the procedures specified in III.A.2.d, the landfill shall be less than 50 megagrams per year on three successive test dates. The test dates shall be no less than 90 days apart, and no more than 180 days apart.

[40 CFR §60.752(b)(2)(v)]

d. The Permittee shall calculate the NMOC emission rate for purposes of determining when the system can be removed as provided in III.A.2.c, using the following equation:

$M_{NMOC} - 1.89*10^{-3}(Q_{LFG})(C_{NMOC})$

where

M_{NMOC} = mass emission rate of NMOC, Mg/yr
Q_{LFG} = flow rate of landfill gas, cubic meters per minute
C_{NMOC} = NMOC concentration, ppmv as hexane

i. The flow rate of the landfill gas, Q_{LFG}, shall be determined by measuring the total landfill gas flow rate at the common header pipe that leads to the control device using a gas flow measuring device calibrated according to the provisions of Section 4 of Method 2E of appendix A of 40 CFR §60.

ii. The average NMOC concentration, C_{NMOC}, shall be determined by collecting and analyzing landfill gas sampled from the common header pipe before the gas moving or condensate removal equipment using the procedures in Method 25C or Method 18 of appendix A of 40 CFR §60. If using Method 18, the minimum list of compounds to be tested shall be those published in the most recent Compilation of Air Pollutant Emission Factors (AP-42). The sample location on the common header pipe shall be before any gas moving, or condensate removal or other gas refining units. The Permittee shall divide the NMOC concentration from Method 25C by 6 to convert from C_{NMOC} as carbon to C_{NMOC} as hexane.

iii. The Permittee may use another method to determine landfill gas flow rate and NMOC concentration if the method has been approved by the Director.

[40 CFR §60.754(b)]

3. Operational Standards and Test Methods

The Permittee shall:

a. Operate the collection system such that gas is collected from each area, cell, or group of cells in the Municipal Solid Waste landfill in which waste has been in place for:

i. 5 years or more if active; or

ii. 2 years or more if closed or at final grade.

[40 CFR §60.753(a)]

b. Operate the collection system with negative pressure at each wellhead except under the following conditions:

i. When a fire or increased well temperature occurs. The Permittee shall record instances when positive pressure occurs in efforts to avoid fire. These records shall be submitted with the annual report as provided in Section III.F.3;

ii. When a geomembrane or synthetic cover is used. The Permittee shall develop acceptable pressure limits in the design plan; or

iii. When the Permittee has a decommissioned well. The well may experience a static positive pressure after shut down to accommodate for declining flow. All design changes shall be approved by the Director.

[40 CFR §60.753(b)]

c. Operate each interior wellhead in the collection system with a landfill gas temperature less than 55 degrees Celsius and with either a nitrogen level less than 20 percent or an oxygen level less than 5 percent. The Permittee may establish a higher operating temperature, nitrogen, or oxygen value at a particular well. A higher operating value demonstration shall show supporting data that the elevated parameter does not cause fires or significantly inhibit anaerobic decomposition by killing methanogens.

i. The nitrogen level shall be determined using Method 3C, unless an alternative test method is established as allowed by Section III.A.1.a.iii.

ii. Unless an alternative test method is established as allowed by Section III.A.1.a.iii, the oxygen shall be determined by an

oxygen meter using Method 3A except that:

(a) The span shall be set so that the regulatory limit is between 20 and 50 percent of the span;

(b) A data recorder is not required;

(c) Only two calibration gases are required, a zero and span, and ambient air may be used as the span;

(d) A calibration error check is not required, and

(e) The allowable sample bias, zero drift, and calibration drift are ±10 percent.

[40 CFR §60.753(c)]

d. Operate the collection system so that the methane concentration is less than 500 ppm above background at the surface of the landfill. To determine if this level is exceeded, the Permittee shall conduct surface testing around the perimeter of the collection area and along a pattern that traverses the landfill at 30 meter intervals and where visual observations indicate elevated concentrations of landfill gas, such as distressed vegetation and cracks or seeps in the cover. The Permittee may establish an alternative traversing pattern that ensures equivalent coverage. A surface monitoring design plan shall be developed that includes a topographical map with the monitoring route and the rationale for any site specific deviations from the 30 meter intervals. Areas with steep slopes or other dangerous area may be excluded from the surface testing.

[40 CFR §60.753(d)]

e. Operate the system such that all collected gases are vented to a control system designed and operated in compliance with Section III.A.1.c. In the event the collection and control system is inoperable, the gas mover system shall be shut down and all valves in the collection and control system contributing to venting of the gas to the atmosphere shall be closed within 1 hour;

[40 CFR §60.753(e)]

f. Operate the control or treatment system at all times when the collected gas is routed to the system.

[40 CFR §60.753(f)]

g. If monitoring demonstrates that the operational requirements in section III.A.3.b, c, and d are not met, corrective action shall be taken as specified in sections III.C.1.c through e or section III.C.2. If corrective actions are taken as specified in section III.C, the monitored exceedance is not a violation of the operational requirements in this section.

[40 CFR §60.753(g)]

B. Specifications for Active Collection Systems

If the facility is required to install a collection and control system as provided in Section A above, the Permittee shall:

1. Site active collection wells, horizontal collectors, or other extraction devices at a sufficient density throughout all gas producing areas using the following procedures unless alternative procedures have been approved by the Director as provided in III.A.1.a.iii and III.A.1.a.iv:

[40 CFR §60.759(a)]

a. The collection devices within the interior and along the perimeter areas shall be certified by a professional engineer to achieve comprehensive control of surface gas emissions. The following issues shall be addressed in the design: depth of refuse, refuse gas generation rate and flow characteristics, cover properties, gas system expendability, leachate and condensate management, accessibility, compatibility with filling operations, integration with closure end use, air intrusion control, corrosion resistance, fill settlement, and resistance to the refuse decomposition heat.

[40 CFR §60.759(a)(1)]

b. The sufficient density of gas collection devices determined in the previous paragraph shall address landfill gas migration issues and augmentation of the collection system through the use of active or passive systems at the landfill perimeter or exterior.

[40 CFR §60.759(a)(2)]

c. The placement of the gas collection devices determined in Section III.B.1.a above, shall control all gas producing areas, except as provided by Section III.B.1.c.i and III.B.1.c.ii.

[40 CFR §60.759(a)(3)]

i. Any segregated area of asbestos or nondegradable material may be excluded from collection if documented as provided in Section III.E.3. The documentation shall provide the nature, date of deposition, location, and amount of asbestos or nondegradable material deposited in the area, and shall be provided to the Director upon request.

[40 CFR §60.759(a)(3)(i)]

ii. Any nonproductive area of the landfill may be excluded from control, provided that the total of all excluded areas can be shown to contribute less than one percent of the total amount of NMOC emissions from the landfill. The amount, location, and age of the material shall be documented and provided to the Director upon request. A separate NMOC emissions estimate shall be made for each section proposed for exclusion, and the sum of all such sections shall be compared to the NMOC

emissions estimate for the entire landfill. Emissions from each section shall be computed using the following equation:

$$Q_i = 2kL_oM_i\ (e^{-kt_i})(C_{NMOC})(3.9*10^{-9})$$

where

Q_i = NMOC emission rate from the i^{th} section, Mg/yr
k = methane generation rate constant, $year^{-1}$
L_o = methane generation potential, cubic meters per megagram solid waste
M_i = mass of the degradable solid waste in the i^{th} section, megagrams
t_i = age of the solid waste in the i^{th} section, years
C_{NMOC} = concentration of nonmethane organic compounds, ppmv

[40 CFR §60.759(a)(3)(ii)]

iii. The values for k and C_{NMOC} determined in field testing shall be used, if field testing has been performed in determining the NMOC emission rate or the radii of influence (the distance from the well center to a point in the landfill where the pressure gradient applied by the blower or compressor approaches zero). If field testing has not been performed, the default values for k, L_o, and C_{NMOC} are provided in Section II.A.3, or the alternative values from section II.E. The mass of the nondegradable solid waste contained within the given section may be subtracted from the total mass of the section when estimating emissions provided the nature, location, age, and amount of the nondegradable material is documented as provided in paragraph III.B.1.c.ii of this section.

[40 CFR §60.759(a)(3)(iii)]

2. Construct the gas collection devices using the following equipment or procedures:

[40 CFR §60.759(b)]

a. The landfill gas extraction components shall be constructed of polyvinyl chloride (PVC), high density polyethylene (HDPE) pipe, fiberglass, stainless steel, or other nonporous corrosion resistant material of suitable dimensions to: convey projected amounts of gases; withstand installation, static and settlement forces; and withstand planned overburden or traffic loads. The collection system shall extend as necessary to comply with emission and migration standards. Collection devices such as wells and horizontal collectors shall be perforated to allow gas entry without head loss sufficient to impair performance across the intended extent of control. Perforations shall be situated with regard to the need to prevent excessive air infiltration.

[40 CFR §60.759(b)(1)]

b. Vertical wells shall be placed so as not to endanger underlying liners and shall address the occurrence of water within the landfill. Holes and trenches constructed for piped wells and horizontal collectors shall be of sufficient cross-section so as to allow for their proper construction and completion including, for example, centering of pipes and placement of gravel backfill. Collection devices shall be designed so as not to allow indirect short circuiting of air into the cover or refuse into the collection system or gas into the air. Any gravel used around pipe perforations should be of a dimension so as not to penetrate or block perforations.

[40 CFR §60.759(b)(2)]

c. Collection devices may be connected to the collection header pipes below or above the landfill surface. The connector assembly shall include a positive closing throttle valve, any necessary seals and couplings, access couplings and at least one sampling port. The collection devices shall be constructed of PVC, HDPE, fiberglass, stainless steel, or other nonporous material of suitable thickness.

[40 CFR §60.759(b)(3)]

3. Convey the landfill gases to a control system in compliance with Section III.A.1.c through the collection header pipe(s). The gas mover equipment shall be sized to handle the maximum gas generation flow rate expected over the intended use period of the gas moving equipment using the following procedures:

[40 CFR §60.759(c)]

a. For existing collection systems, the flow data shall be used to project the maximum flow rate. If no flow data exists, the procedures in paragraph III.B.3.b shall be used.

[40 CFR §60.759(c)(1)]

b. For new collection systems, the maximum flow rate shall be in accordance with III.C.1.a.

[40 CFR §60.759(c)(2)]

C. Compliance Provisions

1. If the facility is required to install a collection and control system as provided in Section III.A; except as provided in Section III.A.1.a.2, the specified methods in paragraphs III.C.1.a through III.C.1.f of this Section shall be used to determine whether the gas collection system is in compliance with Section III.A.1.b.

[40 CFR §60.755(a)]

a. For the purposes of calculating the maximum expected gas generation flow rate from the landfill to determine compliance with Section III.A.1.b.i(a), one of the following equations shall be used. The k and L_o kinetic factors should be those published in the most recent Compilation of Air Pollution Emission Factors (AP-42) or other site specific values demonstrated to be appropriate and approved by the Director. If k has been determined as specified in a Tier 3 analysis (Section II.D), the value

of k determined from the test shall be used. A value of no more than 15 years shall be used for the intended use period of the gas mover equipment. The active life of the landfill is the age of the landfill plus the estimated number of years until closure.

[40 CFR §60.755(a)(1)]

i. For sites with unknown year-to-year solid waste acceptance rate:

$$Q_m = 2L_oR(e^{-kc} - e^{-kt})$$

where

Q_m	=	maximum expected gas generation flow rate, cubic meters per year
L_o	=	methane generation potential, cubic meters per megagram solid waste
R	=	average annual acceptance rate, Mg/yr
k	=	methane generation constant, $years^{-1}$
t	=	age of the landfill at equipment installation plus the time the Permittee intends to use the gas remover equipment or active life of the landfill, whichever is less. If the equipment is installed after closure, t is the age of the landfill at installation, years
c	=	time since closure, years (for an active landfill c=0, and $e^{-kc} = 1$)

[40 CFR §60.755(a)(1)(i)]

ii. For sites with known year-to-year solid waste acceptance rate:

$$Q_m = \sum 2k\, L_oM_i(e^{-kt}i)$$

Q_m	=	maximum expected gas generation flow rate, cubic meters per year
k	=	methane generation constant, $years^{-1}$
L_o	=	methane generation potential, cubic meters per megagram solid waste
M_i	=	mass of solid waste in the ith section, years
t_i	=	age of the ith section, years

[40 CFR §60.755(a)(1)(ii)]

iii. If a collection and control system has been installed, actual flow data may be used to project the maximum expected gas generation flow rate instead of, or in conjunction with, the equations in Sections III.C.1.a.i and ii above. If the landfill is still accepting waste, the actual measured flow data will not equal the maximum expected gas generation rate. Therefore, calculations using the equations in Sections III.C.1.a.i and ii above, or other methods shall be used to predict the maximum

expected gas generation rate over the intended period of use of the gas control system equipment.

[40 CFR §60.755(a)(1)(iii)]

b. For the purposes of determining sufficient density of gas collectors for compliance with Section III.A.1.b.i(b), the Permittee shall design a system of vertical wells, horizontal collectors, or other collection devices, satisfactory to the Director, capable of controlling and extracting gas from all portions of the landfill sufficient to meet all operational and performance standards.

[40 CFR §60.755(a)(2)]

c. For the purposes of demonstrating whether the gas collection system flow rate is sufficient to determine compliance with Section III.A.1.b.i(c), the Permittee shall measure gauge pressure in the gas collection header at each individual well, monthly. If a positive pressure exists, action shall be initiated to correct the exceedance within 5 calendar days, except for the three conditions allowed under Section III.A.3.b. If negative pressure cannot be achieved without excess air infiltration within 15 calendar days of the first measurement, the gas collection system shall be expanded to correct the exceedance within 120 days of the initial measurement of positive pressure. Any attempted corrective measure shall not cause exceedances of other operational or performance standards. An alternative time line for correcting the exceedances may be submitted to the Director for approval.

[40 CFR §60.755(a)(3)]

d. The Permittee is not required to expand the system as required in Section III.C.1.c above, during the first 180 days after gas collection system startup.

[40 CFR §60.755(a)(4)]

e. For the purpose of identifying whether excess air infiltration into the landfill is occurring, the Permittee shall monitor each well monthly for temperature and nitrogen or oxygen as provided in Section III.A.3.c. If a well exceeds one of these operating parameters, action shall be initiated to correct the exceedance within 5 calendar days. If correction of the exceedance cannot be achieved within 15 calendar days of the first measurement, the gas collection system shall be expanded to correct the exceedance within 120 days of the initial exceedance. Any attempted corrective measure shall not cause exceedance of other operational or performance standards. An alternative time line for correcting the exceedances may be submitted to the Director for approval.

[40 CFR §60.755(a)(5)]

f. The Permittee seeking to demonstrate compliance with Section III.A.1.b.i(d), through the use of a collection system not conforming to the specifications provided in Section III.C , shall provide information satisfactory to the Director as specified in Section III.A.1.a.iii, demonstrating that off-site migration is being controlled.

[40 CFR §60.755(a)(6)]

g. For the purpose of compliance with Section III.A.3.a, the Permittee shall place each well or design component as specified in the approved design plan as required in Section III.A.1.a. Each well shall be installed no later than 60 days after the date on which the initial solid waste has been in place for a period of:

i. 5 years or more if active; or

ii. 2 years or more if closed or at final grade.

[40 CFR §60.755(b)]

2. Methane Concentration Limits for an Active Collection System

The following procedures shall be used to determine compliance with the surface methane operational standard as required in Section III.A.3.d.

[40 CFR §60.755(c)]

a. After installation of the collection system the Permittee shall monitor surface concentrations of methane along the entire perimeter of the collection area and along a pattern that traverses the landfill at 30 meter intervals (or site specific established spacing) for each collection area on a quarterly basis using an organic vapor analyzer, flame ionization detector, or other portable monitor meeting the specifications provided in Section III.C.3.

[40 CFR §60.755(c)(1)]

b. The background concentration shall be determined by moving the probe inlet upwind and downwind outside the boundary of the landfill at a distance of at least 30 meters from the perimeter wells.

[40 CFR §60.755(c)(2)]

c. Surface emission monitoring shall be performed in accordance with section 4.3.1 of Method 21 of appendix A of the 40 CFR §60, except that the probe inlet shall be placed within 5 to 10 centimeters of the ground. Monitoring shall be performed during typical meteorological conditions.

[40 CFR §60.755(c)(3)]

d. Any reading of 500 ppm or more above background at any location shall be recorded as a monitored exceedance and the action specified in Section III.C.2.d.i through v of this section shall be taken. As long as the specified actions have been taken, the exceedance is not a violation of the operational requirements of Section III.A.3.d.

[40 CFR §60.755(c)(4)]

i. The location of each monitored exceedance shall be marked and the location recorded.

[40 CFR §60.755(c)(4)(i)]

ii. Cover maintenance or adjustments to the vacuum of the adjacent wells to increase the gas collection in the vicinity of each exceedance shall be made and the location shall be re-monitored within 10 calendar days of detecting the exceedance.

[40 CFR §60.755(c)(4)(ii)]

iii. If the re-monitoring of the location shows a second exceedance, additional corrective action shall be taken and the location shall be monitored again within 10 days of the second exceedance. If the re-monitoring shows a third exceedance for the same location, then the action specified in Section III.C.2.d.v shall be taken, and further monitoring of that location is required until the action specified in Section III.C.2.d.v has been taken.

[40 CFR §60.755(c)(4)(iii)]

iv. Any location that initially showed an exceedance but has a methane concentration less than 500 ppm methane above background at the 10 day re-monitoring specified in Sections III.C.2.d.ii and iii shall be re-monitored 1 month from the initial exceedance. If the 1 month re-monitoring shows a concentration less than 500 parts per million (ppm) above background, then no further monitoring of that location is required until the next quarterly monitoring period. If the 1 month re-monitoring shows an exceedance, then the actions specified in Sections III.C.2.d.iii or v shall be taken.

[40 CFR §60.755(c)(4)(iv)]

v. For any location where the monitored methane concentration equals or exceeds 500 ppm above background three times within a quarterly period, a new well or other collection device shall be installed within 120 calendar days of the initial exceedance. An alternative remedy to the exceedance, such as upgrading the blower, header pipes, or control device, and a corresponding timeline for installation may be submitted to the Director for approval.

[40 CFR §60.755(c)(4)(v)]

e. The Permittee shall implement a program to monitor for cover integrity and implement cover repairs as necessary on a monthly basis.

[40 CFR §60.755(c)(5)]

3. Surface Emission Monitoring Devices for an Active Collection System

The Permittee seeking to comply with the provisions in Section III.C.2 shall comply with the following instrumentation specifications and procedures for surface emission monitoring devices:

[40 CFR §60.755(d)]

a. The portable analyzer shall meet the instrument specifications provided in section 3 of Method 21 of appendix A of 40 CFR §60, except that

"methane" shall replace all references to VOC.

[40 CFR §60.755(d)(1)]

b. The calibration gas shall be methane, diluted to a nominal concentration of 500 ppm in air.

[40 CFR §60.755(d)(2)]

c. To meet the performance evaluation requirements in section 3.1.3 of Method 21 of appendix A of 40 CFR §60, the instrument evaluation procedures of section 4.4 of Method 21 of appendix A of 40 CFR §60 shall be used.

[40 CFR §60.755(d)(3)]

d. The calibration procedures provided in section 4.2 of Method 21 of appendix A of 40 CFR §60 shall be followed immediately before commencing a surface monitoring survey.

[40 CFR §60.755(d)(4)]

4. The provisions specified in Section III.C apply at all times, except during periods of start-up, shutdown, or malfunction, provided that the duration of start-up, shutdown, or malfunction shall not exceed 5 days for collection systems and shall not exceed 1 hour for treatment or control devices.

[40 CFR §60.755(e)]

D. Monitoring of Operations

1. Active Collection System

Except as provided in Section III.A.1.a.ii, this section applies if the Permittee seeks to comply with III.A.1.b.i for an active gas collection system.

a. The Permittee shall install a sampling port and a thermometer, or other temperature measuring device, or an access port for temperature measurements at each wellhead and:

[40 CFR §60.756(a)]

i. Measure the gauge pressure in the gas collection header on a monthly basis as provided in Section III.C.1.c; and

[40 CFR §60.756(a)(1)]

ii. Monitor nitrogen or oxygen concentration in the landfill gas on a monthly basis as provided in Section III.C.1.e; and

[40 CFR §60.756(a)(2)]

iii. Monitor temperature of the landfill gas on a monthly basis as provided in Section III.C.1.e.

[40 CFR §60.756(a)(3)]

2. Enclosed Combustors

If the Permittee seeks to comply with III.A.1.c using an enclosed combustor, then the Permittee shall calibrate, maintain, and operate according to the manufacturer's specification, the following equipment:

[40 CFR §60.756(b)]

a. A temperature monitoring device equipped with a continuous recorder and having a minimum accuracy of ±1 percent of the temperature being measured expressed in degrees Celsius or ±0.5 °C, whichever is greater. A temperature monitoring device is not required for boilers or process heaters with design heat input capacity equal to or greater than 44 megawatts.

[40 CFR §60.756(b)(1)]

b. A device that records flow to or bypass of the control device. The Permittee shall either:

[40 CFR §60.756(b)(2)]

i. Install, calibrate, and maintain a gas flow rate measuring device that shall record the flow to the control device every 15 minutes; or

[40 CFR §60.756(b)(2)(i)]

ii. Secure the bypass line valve in the closed position with a car-seal or a lock-and-key type configuration. A visual inspection of the seal or closure mechanism shall be performed at least once every month to ensure that the valve is maintained in the closed position and that the gas flow is not diverted through the bypass line.

[40 CFR §60.756(b)(2)(ii)]

3. Open Flares

If the Permittee seeks to comply with III.A.1.c using an open flare, then the Permittee shall install, calibrate, maintain, and operate according to the manufacturer's specifications the following equipment:

[40 CFR §60.756(c)]

a. A heat sensing device, such as an ultraviolet beam sensor or thermocouple, at the pilot light or at the flame itself to indicate the continuous presence of a flame.

[40 CFR §60.756(c)(1)]

b. A device that records flow to or bypass of the flare. The Permittee shall either:

[40 CFR §60.756(c)(2)]

i. Install, calibrate, and maintain a gas flow rate measuring device that shall record the flow to the control device at least every 15

minutes; or

[40 CFR §60.756(c)(2)(i)]

ii. Secure the bypass line valve in the closed position with a car-seal or a lock-and-key type configuration. A visual inspection of the seal or closure mechanism shall be performed at least once every month to ensure that the valve is maintained in the closed position and that the gas flow is not diverted through the bypass line.

[40 CFR §60.756(c)(2)(ii)]

4. Surface Methane Monitoring Devices

If the Permittee is seeking to demonstrate compliance with Section III.C.2, the Permittee shall monitor surface concentrations of methane according to the instrument specifications and provisions specified Section III.C.3. Any closed landfill that has no monitored exceedances of the operational standard in three consecutive quarterly monitoring periods may skip to annual monitoring. Any methane reading of 500 ppm or more above background detected during the annual monitoring returns the frequency for that landfill to quarterly monitoring.

[40 CFR §60.756(f)]

5. Other Devices

If the Permittee uses a device other than an open flare or an enclosed combustor, the Permittee shall provide information satisfactory to the Director, as provided in Section III.A.1.a.ii, describing the operation of the control device, the operating parameters that would indicate proper performance, and appropriate monitoring procedures. The Director shall review the information and either approve it, or request that additional information be submitted. The Director may specify additional appropriate monitoring procedures.

[40 CFR §60.756(d)]

6. Alternative

If the Permittee seeks to install a collection system that does not meet the specifications in Section III.B for an active collection system or seeks to monitor alternative parameters to those required by Sections II, III.A, III.C, and III.D shall provide information satisfactory to the Director, as provided in Section III.A.1.a, describing the design and operation of the collection system, the operating parameters that would indicate proper performance, and appropriate monitoring procedures. The Director may specify additional appropriate monitoring procedures.

[40 CFR §60.756(e)]

E. Recordkeeping Requirements

1. Except as provided in Section III.A.1.a.ii, the Permittee shall keep up-to-date, readily accessible records for the life of the control equipment of the data listed in Section III.E.1.a through d of this section as measured during the initial

performance test or compliance determination. Records of subsequent tests or monitoring shall be maintained for a minimum of 5 years. Records of the control device vendor specifications shall be maintained until removal.

[40 CFR §60.758(b)]

a. The Permittee seeking to demonstrate compliance with Section III.A.1.b is expected to have;

[40 CFR §60.758(b)(1)]

i. The maximum expected gas generation flow rate as calculated in Section III.C.1.a of Attachment B. The Permittee may use another method to determine the maximum gas generation flow rate, if the method has been approved by the Director.

[40 CFR §60.758(b)(1)(i)]

ii. The density of wells, horizontal collectors, surface collectors, or other gas extraction devices determined using the procedures specified in Section III.B.1.a.

[40 CFR §60.758(b)(1)(ii)]

b. The Permittee seeking to demonstrate compliance with Section III.A.1.c.ii through the use of an enclosed combustion device other than a boiler or a process heater with a design heat input capacity equal to or greater than 44 megawatts is expected to have;

[40 CFR §60.758(b)(2)]

i. The average combustion temperature measured at least every 15 minutes and averaged over the same time period of the performance test.

[40 CFR §60.758(b)(2)(i)]

ii. The percent reduction of NMOC determined as specified in Section III.A.1.c.ii achieved by the control device.

[40 CFR §60.758(b)(2)(ii)]

c. The Permittee seeking to demonstrate compliance with Section III.A.1.c.ii(a), through use of a boiler or process heater of any size is expected to have a description of the location at which the gas collection vent stream is introduced into the boiler or process heater over the same time period of the performance testing.

[40 CFR §60.758(b)(3]

d. The Permittee seeking to demonstrate compliance with Section III.A.1.c.i through use of an open flare, the flare type (i.e. steam assisted, air assisted, or nonassisted), all visible emission readings, heat content determination, flow rate or bypass flow rate measurements, and exit velocity determinations made during the performance test as specified in 40 CFR §60.18, is expected to have continuous records of the flare pilot flame or flare flame monitoring and records of all periods of operations during which the pilot flame of the flare flame is absent.

[40 CFR §60.758(b)(4)]

2. Equipment Operating Parameters

Except as provided in Section III.A.1.a.ii, the Permittee shall keep 5 years up-to-date, readily accessible continuous records of the equipment operating parameters specified to be monitored in Section III.D. The Permittee shall have up-to-date, readily accessible records for periods of operation during which the parameter boundaries established during the most recent performance test were exceeded.

[40 CFR §60.758(c)]

a. The following constitute exceedances that shall be recorded and reported under Section III.F.3:

[40 CFR §60.758(c)(1)]

i. For enclosed combustors except for boilers and process heaters with design heat input capacity of 44 megawatts (150 million British thermal Units per hour) or greater, all 3 hour periods of operation during which an average combustion temperature was more than 28°C below the average combustion temperature during the most recent performance test at which compliance with Section III.A.1.c.ii(a) was determined.

[40 CFR §60.758(c)(1)(i)]

ii. For the boilers or process heaters, whenever there is a change in the location at which the vent stream is introduced into the flame zone.

[40 CFR §60.758(c)(1)(ii)]

b. The Permittee shall keep up-to-date, readily accessible continuous records of the indication of flow to the control device or the indication of bypass flow or records of monthly inspections of car-seals or lock-and-key used to seal bypass lines specified in Section III.D.

[40 CFR §60.758(c)(2)]

c. If the Permittee uses a boiler or process heater with a design heat input capacity of 44 megawatts or greater to comply with Section III.A.1.c, then the Permittee shall keep an up-to-date, readily accessible record of all periods of operation of the boiler or process heater. (Example of such records could include records of steam use, fuel use, or monitoring data collected pursuant to other State, local, Tribal, or Federal regulatory requirements.)

[40 CFR §60.758(c)(3)]

d. If the Permittee uses an open flare, the Permittee shall keep up-to-date, readily accessible continuous records of the flame or flare pilot flame monitoring specified in Section III.D.3 and up-to-date, readily accessible records of all periods of operation in which the flame or flare pilot flame is absent.

[40 CFR §60.758(c)(4)]

3. Except as provided in Section III.A.1.a.ii, the Permittee shall keep for the life of the collection system an up-to-date, readily accessible plot map which shows each existing and planned collector in the system and provides a unique identification location label for each collector.

[40 CFR §60.758(d)]

a. The Permittee shall keep up-to-date, readily accessible records of the installation date and location of all newly installed collectors as specified in Section III.C.1.g.

[40 CFR §60.758(d)(1)]

b. The Permittee shall keep readily accessible documentation of the nature, date of deposition, amount, and location of asbestos-containing or nondegradable waste excluded from collection as provided in Section III.B.1.c.i, as well as any nonproductive areas excluded from collection as provided in Section III.B.1.c.ii.

[40 CFR §60.758(d)(2)]

4. Except as provided in section III.A.1.a.ii, the Permittee shall keep for at least 5 years up-to-date, readily accessible records of all collection and control system exceedances of the operational standard in Section III.A.3, the reading in the subsequent month whether or not the second reading is an exceedance, and the location of each exceedance.

[40 CFR §60.758(e)]

F. Reporting Requirements

1. The Permittee is exempted from the requirements of Sections II.G.2.a and b, after the installation of a collection and control system in compliance with Section III.A.1 during such time that the collection and control system is in operation and in compliance with Sections III.A.3 and III.C.

[40 CFR §60.757(b)(3)]

2. The Permittee shall submit a collection and control system design plan to the Director within 1 year of the first report required under Section II.G.2, in which the emission rate exceeds 50 Mg/yr, except as follows:

[40 CFR §60.757(c)]

a. If the Permittee elects to recalculate the NMOC emission rate after Tier 2 NMOC sampling and analysis as provided in Section II and the resulting rate is less than 50 Mg/yr, annual periodic reporting shall be resumed, using the Tier 2 determined site-specific NMOC concentration, until the calculated emission rate is equal to or greater than 50 Mg/yr or the landfill is closed. The revised NMOC emission rate report, with the recalculated emission rate based on NMOC sampling and analysis, shall be submitted within 180 days of the first calculated exceedance of 50 Mg/yr.

[40 CFR §60.757(c)(1)]

b. If the Permittee elects to recalculate the NMOC emission rate after determining a site-specific methane generation rate constant (k), as provided in Tier 3, and the resulting NMOC emission rate is less than 50 Mg/yr, annual periodic reporting shall be resumed. The resulting site-specific methane generation rate constant (k) shall be used in the emission rate calculation until such time as the emission rate calculation results in an exceedance. The revised NMOC emission rate report based on the provisions of Section II.D, and the resulting site-specific methane generation rate constant (k) shall be submitted to the Director within 1 year of the first calculated emission rate exceeding 50 Mg/yr.

[40 CFR §60.757(c)(2)]

3. The Permittee using an active collection system shall submit to the Director reports of the recorded information in paragraphs 1-6 of this section every 6 months. The initial annual report shall be submitted within 180 days of installation and start-up of the collection and control system, and shall include the initial performance test report required under 40 CFR §60.8. For enclosed combustion devices and flares, reportable exceedances are defined in section III.E.2.

[40 CFR §60.757(f) & 40 CFR §63.1980(a)]

a. Value and length of time for exceedance of applicable parameters monitored in Section III.D.1, 2, 3, and 5.

[40 CFR §60.757(f)(1)]

b. Description and duration of all periods when the gas stream is diverted from the control device through a bypass line or the indication of bypass flow as specified in Section III.D.

[40 CFR §60.757(f)(2)]

c. Description and duration of all periods when the control device was not operating for a period exceeding 1 hour and length of time the control device was not operating.

[40 CFR §60.757(f)(3)]

d. All periods when the collection system was not operating in excess of 5 days.

[40 CFR §60.757(f)(4)]

e. The location of each exceedance of the 500 ppm methane concentration as provided in Section III.A.3.d, and the concentration recorded at each location for which an exceedance was recorded in the previous month.

[40 CFR §60.757(f)(5)]

f. The date of installation and the location of each well or collection system expansion added pursuant to Sections III.C.1.c, III.C.1.g, and III.C.2.d.

[40 CFR §60.757(f)(6)]

4. If the Permittee is seeking to comply with Section III.A.1.c, then the Permittee

shall include the following information with the initial performance test report required under 40 CFR §60.8:

[40 CFR §60.757(g)]

a. A diagram of the collection system showing collection system positioning including all wells, horizontal collectors, surface collectors, or other gas extraction devices, including the locations of any areas excluded from collection and the proposed sites for the future collection system expansion;

[40 CFR §60.757(g)(1)]

b. The data upon which the sufficient density of wells, horizontal collectors, surface collectors, or other gas extraction devices and the gas mover equipment sizing are based;

[40 CFR §60.757(g)(2)]

c. The documentation of the presence of asbestos or nondegradable material for each from which collection wells have been excluded based on the presence asbestos or nondegradable material;

[40 CFR §60.757(g)(3)]

d. The sum of the gas generation flow rates for all areas from which collection wells have been excluded based on non-productivity and the calculations of gas generation flow rate for each excluded area;

[40 CFR §60.757(g)(4)]

e. The provisions for increasing gas mover equipment capacity with increased gas generation flow rate, if the present gas mover equipment is inadequate to move the maximum flow rate expected over the life of the landfill;

[40 CFR §60.757(g)(5)]

f. The provisions for controlling off-site migration.

[40 CFR §60.757(g)(6)]

5. The Permittee shall submit an equipment removal report to the Director 30 days prior to removal or cessation of operation of the control equipment.

[40 CFR §60.757(e)]

a. The equipment removal report shall contain all of the following items:

[40 CFR §60.757(e)(1)]

i. A copy of the closure report submitted in accordance with Section III.F.6.

[40 CFR §60.757(e)(1)(i)]

ii. A copy of the initial performance test report demonstrating that the 15 year minimum control period has expired; and

[40 CFR §60.757(e)(1)(ii)]

iii. Dated copies of three successive NMOC emissions rate reports demonstrating that the landfill is no longer producing 50 Mg/yr or greater of NMOC.

[40 CFR §60.757(e)(1)(iii)]

b. The Director may request such additional information as may be necessary to verify that all of the conditions for removal have been met.

[40 CFR §60.757(e)(2)]

6. The Permittee shall submit a closure report to the Director within 30 days of waste acceptance cessation. The Director may request additional information as may be necessary to verify that permanent closure has taken place in accordance with the requirements of 40 CFR §258.60. If a closure report has been submitted to the Director, no additional wastes may be placed into the landfill without filing a notification of modification as described in 40 CFR §60.7(a)(4).

[40 CFR §60.757(d)]

G. Operation and Maintenance Requirements

1. Startup, Shutdown and Malfunction

a. At all times, including periods of startup, shutdown, and malfunction (SSM), the Permittee must operate and maintain the source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. During a period of SSM, this general duty to minimize emissions requires that the Permittee reduce emissions from the source to the greatest extent which is consistent with safety and good air pollution control practices. The general duty to minimize emissions during a period of SSM does not require the Permittee to achieve emission levels that would be required by the applicable standard at other times if this is not consistent with safety and good air pollution control practices, nor does it require the Permittee to make any further efforts to reduce emissions if levels required by the applicable standard have been achieved. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Director which may include, but is not limited to, monitoring results, review of operation and maintenance procedures (including the SSM plan required in III.G.2 of this Attachment), review of operation and maintenance records, and inspection of the source.

[40 CFR §63.1980(b) & 40 CFR §63.6(e)(1)(i)]

b. Malfunctions must be corrected as soon as practicable after their occurrence in accordance with the SSM plan required in III.G.2 of this Attachment. To the extent that an unexpected event arises during an SSM, the Permittee must comply by minimizing emissions during such an SSM event consistent with safety and good air pollution control practices.

[40 CFR §63.1980(b) & 40 CFR §63.6(e)(1)(ii)]

c. Operation and maintenance requirements established pursuant to Section 112 of the Clean Air Act (the Act) are enforceable independent of emissions limitations or other requirements in relevant standards.

[40 CFR §63.1980(b) & 40 CFR §63.6(e)(1)(iii)]

2. Startup, shutdown and malfunction (SSM) plan

a. The Permittee must develop and implement a written SSM plan that describes, in detail, procedures for operating and maintaining the source during SSM periods, and a program of corrective action for malfunctioning process and air pollution control and monitoring equipment used to comply with the relevant standard. This plan must be developed by the Permittee's compliance date for that relevant standard.

[40 CFR §63.1980(b) & 40 CFR §63.6(e)(3)(i)]

b. During SSM periods, the Permittee must operate and maintain the source (including associated air pollution control and monitoring equipment) in accordance with the procedures specified in the SSM plan developed under III.G.2.a above.

[40 CFR §63.1980(b) & 40 CFR §63.6(e)(3)(ii)]

c. When actions taken by the Permittee during SSM (including actions taken to correct a malfunction) are consistent with the procedures specified in the SSM plan, the Permittee must keep records for that event which demonstrate that the procedures specified in the plan were followed. These records may take the form of a checklist, or other effective form of recordkeeping that confirms conformance with the SSM plan for that event. In addition, the Permittee must keep records of these events as specified in III.G.3, including records of the occurrence and duration of each startup, shutdown or malfunction of operation and each malfunction of the air pollution control and monitoring equipment. Furthermore, the Permittee shall confirm that actions taken during the relevant reporting period during SSM periods were consistent with the source's SSM plan in the semiannual SSM report required in III.G.4.

[40 CFR §63.1980(b) & 40 CFR §63.6(e)(3)(iii)]

d. If an action taken by the Permittee during an SSM (including an action taken to correct a malfunction) is not consistent with the procedures specified in the source's SSM plan, and the source exceeds any applicable emission limitation in the relevant emission standard, then the Permittee must record the actions taken for that event and must report such actions within 2 working days after commencing actions inconsistent with the plan, followed by a letter within 7 working days after the end of the event, in accordance with III.G.4.b (unless the Permittee makes alternative reporting arrangements, in advance, with the Director).

[40 CFR §63.1980(b) & 40 CFR §63.6(e)(3)(iv)]

e. The Permittee must maintain at the source a current SSM plan and must

make the plan available upon request for inspection and copying by the Director. In addition, if the SSM plan is subsequently revised as provided in III.G.2.h, the Permittee must maintain at the source each previous (i.e. superseded) version of the SSM plan, and must make each such previous version available for inspection and copying by the Director for a period of 5 years after the revision of the plan. If at any time after adoption of an SSM plan the source ceases operation or is otherwise no longer subject to the provisions of Section III.G, the Permittee must retain a copy of the most recent plan for 5 years from the date the source ceases operation or is no longer subject to III.G and must make the plan available upon request for inspection or copying by the Director. The Director may at any time request in writing that the Permittee submit a copy of any SSM plan (or a portion thereof) which is maintained at the source or in the possession of the Permittee. Upon receipt of such a request, the Permittee must promptly submit a copy of the requested plan (or a portion thereof) to the Director. The Director must request that the Permittee submit a particular SSM plan (or a portion thereof) whenever a member of the public submits a specific and reasonable request to examine or to receive a copy of that plan or portion of a plan. The Permittee may elect to submit the required copy of any SSM plan to the Director in electronic format. If the Permittee claims that any portion of such an SSM plan is confidential business information entitled to protection from disclosure under section 114(c) of the Act or 40 CFR §2.301, the material which is claimed as confidential must be clearly designated in the submission.

[40 CFR §63.1980(b) & 40 CFR §63.6(e)(3)(v)]

f. To satisfy the requirements of this section to develop an SSM plan, the Permittee may use the source's standard operating procedures (SOP) manual, or an Occupational Safety and Health Administration (OSHA) or other plan, provided the alternative plans meet all the requirements of this section and are made available for inspection or submitted when requested by the Director.

[40 CFR §63.1980(b) & 40 CFR §63.6(e)(3)(vi)]

g. Based on the results of a determination made under III.G.1.a above, the Director may require that the Permittee make changes to the SSM plan. The Director must require appropriate revisions to an SSM plan, if the Director finds that the plan:

i. Does not address an SSM event that has occurred,

ii. Fails to provide for the operation of the source (including associated air pollution control and monitoring equipment) during an SSM event in a manner consistent with the general duty to minimize emissions established by III.G.1.a above,

iii. Does not provide adequate procedures for correcting malfunctioning process and/or air pollution control and monitoring equipment as quickly as practicable, or

iv. Includes an event that does not meet the definition of an SSM event listed in 40 CFR §63.2

[40 CFR §63.1980(b) & 40 CFR §63.6(e)(3)(vii)]

h. The Permittee may periodically revise the SSM plan as necessary to satisfy the requirements of this section of to reflect changes in equipment or procedures at the source. The Permittee may make such revisions to the SSM plan without prior approval by the Director. However, each such revision to an SSM plan must be reported in the semiannual report required by III.G.4. If the SSM plan fails to address or inadequately addresses an event that meets the characteristics of a malfunction but was not included in the SSM plan at the time the Permittee developed the plan, the Permittee must revise the SSM plan within 45 days after the event to include detailed procedures for operating and maintaining the source during similar malfunction events and a program of corrective action for similar malfunctions of process or air pollution control and monitoring equipment. In the event that the Permittee makes any revision to the SSM plan which alters the scope of the activities at the source which are deemed to be a startup, shutdown or malfunction, or otherwise modifies the applicability of any emission limit, work practice requirement, or other requirement in a standard established under this section, the revised plan shall not take effect until after the Permittee has provided a written notice describing the revision to the Director.

[40 CFR §63.1980(b) & 40 CFR §63.6(e)(3)(viii)]

3. The Permittee shall maintain relevant records of the following:

a. The occurrence and duration of each startup, shutdown or malfunction of operation (i.e. process equipment),

[40 CFR §63.1980(b) & 40 CFR §63.10(b)(2)(i)]

b. The occurrence and duration of each malfunction of the required air pollution control and monitoring equipment,

[40 CFR §63.1980(b) & 40 CFR §63.10(b)(2)(ii)]

c. All required maintenance performed on the air pollution control and monitoring equipment,

[40 CFR §63.1980(b) & 40 CFR §63.10(b)(2)(iii)]

d. Actions taken during SSM periods (including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation) when such actions are different from the procedures specified in the SSM plan,

[40 CFR §63.1980(b) & 40 CFR §63.10(b)(2)(iv)]

e. All information necessary to demonstrate conformance with the SSM plan when all actions taken during periods of startup, shutdown, and malfunction (including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal

or usual manner of operation) are consistent with the procedures specified in such plan. (The information needed to demonstrate conformance with the SSM plan may be recorded using a checklist, or some other effective form of recordkeeping, in order to minimize the recordkeeping burden for conforming events)

[40 CFR §63.1980(b) & 40 CFR §63.10(b)(2)(v)]

4. Periodic SSM Reports

a. If actions taken by the Permittee during SSM of the source (including actions taken to correct a malfunction) are consistent with the procedures specified in the SSM plan, the Permittee shall state such information in an SSM report. Such a report shall identify any instance where any action taken by the Permittee during SSM (including actions taken to correct a malfunction) is not consistent with the SSM plan, but the source does not exceed any applicable emission limitation in the relevant emission standard. Such a report shall also include the number, duration, and a brief description for each type of malfunction which occurred during the reporting period and which caused or may have caused any applicable emission limitation to be exceeded. Reports shall only be required if a startup, shutdown, or malfunction occurred during the reporting period. The SSM report shall consist of a letter, containing the name, title and signature of the Permittee or other responsible official who is certifying its accuracy, which shall be submitted to the Director semiannually. The SSM report shall be delivered or postmarked by the 30th day following the end of each calendar half.

[40 CFR §63.1980(b) & 40 CFR §63.10(e)(5)(i)]

b. Any time an action taken by the Permittee during an SSM event is not consistent with the procedures specified in the SSM plan, and the source exceeds any applicable emission limitation in the relevant emission standard, the Permittee shall report the actions taken for that event (via telephone call or facsimile transmission) to the Director within 2 working days after commencing actions inconsistent with the plan followed by a letter (containing the name, title and signature of the responsible official who is certifying its accuracy) delivered or postmarked within 7 working days after the end of the event. The letter shall explain the circumstances of the event, the reasons for not following the SSM plan, and describe all excess emissions and/or parameter monitoring exceedances which are believed to have occurred.

[40 CFR §63.1980(b) & 40 CFR §63.10(e)(5)(ii)]

H. Permit Shield

Compliance with Section III shall be deemed compliance with the following applicable requirements as of the issuance date of this permit: 40 CFR §60.757(b)(3), (c), (d), (e), (f) and (g), 40 CFR §60.752(b), 40 CFR §60.754(b) and (d), 40 CFR §60.753, 40 CFR §60.759, 40 CFR §60.755, 40 CFR §60.756, 40 CFR §60.758(b), (c), (d) and (e), 40 CFR

§63.6(e), 40 CFR §63.10(b)(2)(i) through (b)(2)(v), 40 CFR §63.10(d)(5), and 40 CFR §63.1980 (a) and (b).

[A.A.C. R18-2-325]

IV. ASBESTOS

The provisions of this section only apply if asbestos-containing waste materials, as defined in 40 CFR §61.141, are accepted at the landfill.

A. Emission Limits

The Permittee shall meet these requirements:

[40 CFR §61.154]

1. Either there must be no visible emissions to the outside air from any active waste disposal site where asbestos-containing waste material has been deposited, or the requirements of Sections IV.A.3 and 4 be met.

[40 CFR §61.154(a)]

2. Unless a natural barrier adequately deters access by the general public, either warning signs and fencing must be installed and maintained as follows, or the requirements of Sections IV.A.3.a.

[40 CFR §61.154(b)]

a. Warning signs must be displayed at all entrances and at intervals of 100 m (330 ft) or less along the property line of the site or along the perimeter of the sections of the site where asbestos-containing waste material is deposited. The warning signs must:

[40 CFR §61.154(b)(1)]

(i) Be posted in such a manner and location that a person can easily read the legend; and

[40 CFR §61.154(b)(1)(i)]

(ii) Conform to the requirements of 51cm x 36cm (20" x 14") upright format signs specified in 29 CFR 1910.145(d)(4) and this paragraph; and

[40 CFR §61.154(b)(1)(ii)]

(iii) Display the following legend in the lower panel with letter sizes and styles of a visibility at least equal to those specified in this paragraph.

Legend	Notation
Asbestos Waste Disposal Site	2.5 cm (1 inch) Sans Serif, Gothic or Block
Do Not Create Dust	1.9 cm (3/4 inch) Sans Serif, Gothic or Block.
Breathing Asbestos is Hazardous to Your Health	14 Point Gothic

Spacing between any two lines must be at least equal to the height of the upper of the two lines.

b. The perimeter of the disposal site must be fenced in a manner adequate to deter access by the general public.

[40 CFR §61.154(b)(2)]

c. Upon request and supply of appropriate information, the Director will determine whether a fence or a natural barrier adequately deters access by the general public.

[40 CFR §61.154(b)(3)]

3. Rather than meet the no visible emission requirements of Section IV.A.1 at the end of each operating day, or at least once every 24-hour day period while the site is in continuous operation, the asbestos-containing waste material that has been deposited at the site during the operating day or previous 24-hour period shall:

[40 CFR §61.154(c)]

a. Be covered with at least 15 cm (6 in) of compacted nonasbestos-containing material, or

[40 CFR §61.154(c)(1)]

b. Be covered with a resinous or petroleum-based dust suppression agent that effectively binds dust and controls wind erosion. Such an agent shall be used in the manner and frequency recommended for the particular dust by the dust suppression agent manufacturer to achieve and maintain dust control. Other equally effective dust suppression agents may be used upon prior approval by the Director. For purposes of this paragraph, any used, spent, or other waste oil is not considered a dust suppression agent.

[40 CFR §61.154(c)(2)]

4. Rather than meet the no visible emission requirements of Section IV.A.1, use an alternative emissions control method that has received prior written approval by the Director according to the procedures described in the 40 CFR §61.149(c)(2).

[40 CFR §61.154(d)]

B. Monitoring/Recordkeeping

1. For all asbestos-containing waste material received, the Permittee of the active waste disposal site shall:

[40 CFR §61.154(e)]

a. Maintain waste shipment records, using a form similar to the form described in 40 CFR §61.154 and Attachment D, and include the following information:

[40 CFR §61.154(e)(1)]

(i) The name, address, and telephone number of the waste generator.

[40 CFR §61.154(e)(1)(i)]

(ii) The name, address, and telephone number of the transporter(s).

[40 CFR §61.154(e)(1)(ii)]

(iii) The quantity of the asbestos-containing material in cubic meters (cubic yards).

[40 CFR §61.154(e)(1)(iii)]

(iv) The presence of improperly enclosed or uncovered waste, or an asbestos-containing waste material not sealed in leak-tight containers. Report in writing to the local, State, or EPA Regional office responsible for administering the asbestos NESHAP program for the waste generator (identified in the waste shipment record), and, if different, the local, State, or EPA Regional office responsible for administering the asbestos NESHAP program for the disposal site, by the following working day, the presence of a significant amount of improperly enclosed or uncovered waste. Submit a copy of the waste shipment record along with the report.

[40 CFR §61.154(e)(1)(iv)]

(v) The date of receipt.

[40 CFR §61.154(e)(1)(v)]

b. As soon as possible and no longer than 30 days after receipt of the waste, send a copy of the signed waste shipment record to the waste generator.

[40 CFR §61.154(e)(2)]

c. Upon discovering a discrepancy between the quantity of waste designated on the waste shipment records and the quantity actually received, attempt to reconcile the discrepancy with a waste generator. If the discrepancy is not resolved within 15 days after receiving the waste, immediately report in writing to the local, State, or EPA Regional office responsible for administering the asbestos NESHAP program for waste generator (identified in the waste shipment record), and, if different, the

local, State, or EPA Regional office responsible for administering the asbestos NESHAP program for the disposal site. Describe the discrepancy and attempts to reconcile it, and submit a copy of the waste shipment record along with the report.

[40 CFR §61.154(e)(3)]

d. Retain a copy of all records and reports required by this paragraph for at least 2 years.

[40 CFR §61.154(e)(4)]

2. Maintain, until closure, records of the location, depth and area, and quantity in cubic meters (cubic yards) of asbestos-containing material within the disposal site on a map of diagram of the disposal area.

[40 CFR §61.154(f)]

3. Upon closure of any active waste disposal site that receives deposits of asbestos-containing waste material shall comply with all the provisions of 40 CFR §61.151.

[40 CFR §61.154(g)]

4. Submit to the Director, upon closure of the facility, a copy of records of asbestos waste disposal locations and quantities.

[40 CFR §61.154(h)]

a. Furnish upon request, and make available during normal business hours for inspection by the Director, all records required under this section.

[40 CFR §61.154(i)]

b. Notify the Director in writing at least 45 days prior to excavating or otherwise disturbing any asbestos-containing waste material that has been deposited at a waste disposal site and is covered. If the excavation will begin on a date other than the one contained in the original notice, notice of the new start date must be provided to the Director at least 10 working days before excavation begins and in no event shall excavation begin earlier than the date specified in the original notification. Include the following information in the notice:

[40 CFR §61.154(j)]

(i) Scheduled starting and completion dates.

[40 CFR §61.154(j)(1)]

(ii) Reason for disturbing the waste.

[40 CFR §61.154(j)(2)]

(iii) Procedures to be used to control emissions during the excavation, storage, transport, and ultimate disposal of the excavated asbestos-containing waste material. If deemed necessary, the Director may require changes in the emission control procedures to be used.

[40 CFR §61.154(j)(3)]

(iv) Location of any temporary storage site and the final disposal site.
[40 CFR §61.154(j)(4)]

C. Reporting

Receipt, handling and disposal of asbestos containing waste received from sources covered by 40 CFR §61.149 (asbestos mills), 40 CFR §61.150 (demolition, renovation, fabricating and manufacturing), or 40 CFR §61.155 (asbestos conversion operations) must meet the following standards:

[40 CFR §61.154]

1. If Permittee discovers improperly enclosed or uncovered asbestos-containing waste materials, or any asbestos-containing waste material not sealed in leak-tight containers, Permittee shall by the following working day report in writing to the Director, as well as to any additional local or EPA Regional Office responsible for administering the asbestos NESHAP program for the waste generator, reporting the incident and submitting a copy of the waste shipment record.

[40 CFR §61.154(e)(1)(iv)]

2. If Permittee discovers a discrepancy between the quantity of waste designated on the waste shipment records and the quantity actually received, Permittee shall attempt to reconcile the discrepancy with the waste generator. If the discrepancy is not resolved within 15 days after receiving the waste, Permittee shall immediately report in writing to the Director as well as to any additional local, State, or EPA Regional Office responsible for administering the asbestos NESHAP program for the waste generator, describing the discrepancy, the attempts to reconcile the discrepancy, and submit an accompanying copy of the waste shipment record.

[40 CFR §61.154(e)(3)]

D. Permit Shield

Compliance with Section IV shall be deemed compliance with the following applicable requirement as of the issuance date of this permit: 40 CFR §61.154.

[A.A.C. R18-2-325]

V. FUGITIVE DUST SOURCES

This Section applies to open areas, dry washes, riverbeds, roadways, streets, material handling operations, and storage piles.

Particulate Matter and Opacity

A. Emission Limitations/Standards

1. The Permittee shall not cause, allow or permit visible emissions from open areas, roadways and streets, storage piles or material handling in excess of 40 percent opacity measured in accordance with the Arizona Testing Manual, Reference Method 9.

[A.A.C. R18-2-612]

2. The Permittee shall employ the following reasonable precautions to prevent excessive amounts of particulate matter from becoming airborne:

a. Keep dust and other types of air contaminants to a minimum in an open area where construction operations, repair operations, demolition activities, clearing operations, leveling operations, or any earth moving or excavating activities are taking place, by good modern practices such as using an approved dust suppressant or adhesive soil stabilizer, paving, covering, landscaping, continuous wetting, detouring, barring access, or other acceptable means;

[A.A.C. R18-2-604.A]

b. Keep dust to a minimum from driveways, parking areas, and vacant lots where motor vehicular activity occurs by using an approved dust suppressant, or adhesive soil stabilizer, or by paving, or by barring access to the property, or by other acceptable means;

[A.A.C. R18-2-604.B]

c. Keep dust and other particulate to a minimum by employing dust suppressants, temporary paving, detouring, wetting down or by other reasonable means when a roadway is repaired, constructed, or reconstructed;

[A.A.C. R18-2-605.A]

d. Keep dust and other particulate to a minimum by employing reasonable precautions, such as wetting, applying dust suppressants, or covering the load when transporting material likely to give rise to airborne dust. Earth or other material that is deposited by trucking or earth moving equipment shall be removed from paved streets;

[A.A.C. R18-2-605.B]

e. Keep dust and other particulate to a minimum by employing reasonable precautions, such as the use of spray bars, wetting agents, dust suppressants, covering the load, and hoods when handling, transporting, or conveying materials or other operations likely to give rise to airborne dust;

[A.A.C. R18-2-606]

f. The Permittee shall not cause, suffer, allow, or permit organic or inorganic dust producing material to be stacked, piled, or otherwise stored without taking reasonable precautions such as chemical stabilization, wetting, or covering to prevent excessive amounts of

particulate matter from becoming airborne.

[A.A.C. R18-2-607.A]

g. Stacking and reclaiming machinery utilized at storage piles shall be operated at all times with a minimum fall of material and in such manner, or with the use of spray bars and wetting agents, as to prevent excessive amounts of particulate matter from becoming airborne.

[A.A.C. R18-2-607.B]

h. Any other method as proposed by the Permittee and approved by the Director.

[A.A.C. R18-2-306.A.2]

B. Air Pollution Control Requirements

Haul Roads and Storage Piles

Water, or an equivalent control, shall be used to control visible emissions from haul roads and storage piles.

[A.A.C. R-18-2-306.A.2 and -331.A.3.d]
[Material Permit Condition is indicated by underline and italics]

C. Monitoring and Recordkeeping

1. The Permittee shall maintain records of the locations and dates on which any of the activities in Section V.A are performed and control measures employed.

[A.A.C. R18-2-306.A.4]

2. The Permittee shall follow a Department-approved observation plan to monitor visible emissions from fugitive dust sources at the facility. The observation plan shall identify a central lookout station or multiple observation points, as appropriate, from where the fugitive dust source opacity will be monitored. When multiple observation points are used, all the fugitive dust sources associated with each observation point shall be specifically identified within the plan.

[A.A.C. R18-2-306.A.3.b]

3. A certified Method 9 observer shall conduct a bi-weekly (every other week) visual survey of visible emissions from the fugitive dust sources in accordance with the observation plan. Permittee shall keep record of the name of the observer, the location and date on which the observation was made, and the results of the observation.

[A.A.C. R18-2-306.A.3.b]

4. If the observer sees a plume from a fugitive dust source that on an instantaneous basis appears to exceed 40%, then the observer shall if possible take a six-minute Method 9 observation of the plume.

[A.A.C. R18-2-306.A.3.b]

a. If the six-minute opacity of the plume exceeds 40%, then the Permittee shall do the following:

(i) Take appropriate action including adjustment and repair of the controls or equipment to reduce opacity to below 40%; and

[A.A.C. R18-2-306.A.3.b]

(ii) Report it as an excess emission under Section XII.A of Attachment A.

[A.A.C. R18-2-306.A.3.b]

b. If the six minute opacity of the plume is less than 40%, the observer shall make a record of the following:

(i) Location, date, and time of the test; and

[A.A.C. R18-2-306.A.3.b]

(ii) The result of the Method 9 observation.

[A.A.C. R18-2-306.A.3.b]

5. Any changes to the observation plan, originally approved by the Department, shall be made only with the prior approval of the Director.

[A.A.C. R18-2-306.A.3.b]

D. Permit Shield

Compliance with Section V shall be deemed compliance with the following applicable requirements as of the issuance date of this permit: A.A.C. R18-2-604A, A.A.C. R18-2-604B, A.A.C. R18-2-605, A.A.C. R18-2-606, A.A.C. R18-2-607, and A.A.C. R18-2-612.

[A.A.C. R18-2-325]

VI. STATIONARY ROTATING MACHINERY

A. Fuel Limitations

The Permittee shall burn only natural gas, propane, or diesel fuel in any stationary rotating machinery.

[A.A.C. R18-2-306.A.2]

B. Opacity

1. Emission Limitation

The Permittee shall not cause, allow, or permit to be emitted into the atmosphere from any stationary rotating machinery, smoke for any period greater than ten consecutive seconds, which exceeds 40 percent opacity. Visible emissions when starting cold equipment shall be exempt from this requirement for the first ten minutes.

[A.A.C.R18-2-719.E]

2. Monitoring and Record keeping

A certified EPA Reference Method 9 observer shall conduct a bi-weekly survey

of visible emissions emanating from the stack(s) of any stationary rotating machinery. If the opacity of the emissions observed appears to exceed the standard, the observer shall conduct a certified EPA Reference Method 9 observation. The Permittee shall keep records of the initial survey and any EPA Reference Method 9 observations performed. These records shall include the emission point observed, location of observer, name of observer, date and time of observation, and the results of the observation. If the observation shows a Method 9 opacity reading in excess of 40%, the Permittee shall report this to ADEQ as excess emission and initiate appropriate corrective action to reduce the opacity below 40%. The Permittee shall keep a record of the corrective action performed.

[A.A.C. R18-2-306.A.3.c]

3. Permit Shield

Compliance with the conditions of this Part shall be deemed compliance with A.A.C. R18-2-719.E.

[A.A.C. R18-2-325]

C. Particulate Matter

1. Emission Limitations/Standards

The Permittee shall not cause, allow, or permit the emission of particulate matter, caused by combustion of fuel, from any stationary rotating machinery in excess of the amount calculated by the following equation:

$E = 1.02\ Q^{0.769}$

Where:

E = the maximum allowable particulate emissions rate in pounds mass per hour

Q = the heat input in million Btu per hour

[A.A.C. R18-2-719.C.1]

2. Monitoring and Record Keeping

The Permittee shall keep records of fuel supplier certifications to demonstrate compliance with the PM limit specified in Condition VI.C.1. The certification shall contain information regarding the name of fuel supplier and heating value of the fuel. These records shall be made available to ADEQ upon request.

[A.A.C. R18-2-306.A.3.c]

3. Permit Shield

Compliance with the conditions of this Part shall be deemed compliance with the following applicable requirement as of the issuance date of this permit: A.A.C. R18-2-719.C.1.

[A.A.C. R18-2-325]

D. Sulfur Dioxide

1. Emission Limitations/Standards

a. The Permittee shall not emit or cause to emit more than 1.0 pound of sulfur dioxide per million Btu heat input when low sulfur fuel is fired.

[A.A.C. R18-2-719.F]

b. The Permittee shall not fire high sulfur fuel (greater than 0.9 percent sulfur in fuel) in any stationary rotating machinery.

[A.A.C. R18-2-719.H]

2. Monitoring and Record Keeping

a. The Permittee shall keep records of fuel supplier certifications to demonstrate compliance with the sulfur content limit specified in this Condition VI.D.1.b above. The certification shall contain information with regard to sulfur content and the method used to determine the sulfur content of the fuel. These records shall be made available to ADEQ upon request.

[A.A.C. R18-2-306.A.3.c]

b. The Permittee shall report to the Director any daily period during which the sulfur content of the fuel being fired in the stationary rotating machinery exceeds 0.8%.

[A.A.C. R18-2-719.J]

3. Permit Shield

Compliance with the conditions of this Part shall be deemed compliance with the following applicable requirements as of the issuance date of this permit: A.A.C. R18-2-719.F, H, & J.

[A.A.C. R18-2-325]

VII. MOBILE SOURCES

The requirements of this Section are applicable to mobile sources which either move while emitting air contaminants or are frequently moved during the course of their utilization but are not classified as motor vehicles, agricultural vehicles, or agricultural equipment used in normal farm operations. Mobile sources shall not include portable sources as defined in A.A.C. R18-2-101.84.

[A.A.C.R18-2-801.A]

A. Particulate Matter and Opacity Standards

1. No mobile source shall emit smoke or dust, the opacity of which exceeds 40 percent as determined by EPA Reference Method 9.

[A.A.C. R18-2-801.B]

2. The Permittee shall not cause, allow, or permit to be emitted into the atmosphere

from any off-road machinery, smoke for any period greater than ten consecutive seconds, the opacity of which exceeds 40 percent. Visible emissions when starting cold equipment shall be exempt from this requirement for the first ten minutes. Off-road machinery shall include trucks, graders, scrapers, rollers, locomotives and other construction and mining machinery not normally driven on a completed public roadway.

[A.A.C.R18-2-802]

3. The Permittee shall not cause, allow, or permit to be emitted into the atmosphere from any roadway or site cleaning machinery either smoke or dust for any period greater than ten consecutive seconds, the opacity of which exceeds 40 percent. Visible emissions when starting cold equipment shall be exempt from this requirement for the first ten minutes.

[A.A.C.R18-2-804.A]

4. The Permittee shall not cause, allow or permit the cleaning of any site, roadway, or alley without taking reasonable precautions to prevent particulate matter from becoming airborne. Reasonable precautions may include applying dust suppressants. Earth or other material shall be removed from paved streets onto which earth or other material has been transported by trucking or earth moving equipment, erosion by water or by other means.

[A.A.C.R18-2-804.B]

B. Permit Shield

Compliance with Section VII shall be deemed compliance with the following applicable requirements as of the issuance date of this permit: A.A.C. R18-2-801, A.A.C. R18-2-802 and A.A.C. R18-2-804.

[A.A.C. R18-2-325]

VIII. STRATOSPHERIC OZONE

A. If the Permittee is subject to 40 CFR §82, then the Permittee shall comply with the provisions specified in 40 CFR §82 and keep all records required by the applicable requirements of 40 CFR §82 - Subpart F in a file.

[40 CFR §82]

ATTACHMENT "C": EQUIPMENT LIST

Air Quality Control Permit No. 36194
For
City of Flagstaff – Cinder Lake Landfill

EQUIPMENT TYPE	MAX. CAPACITY	MAKE	MODEL	SERIAL NUMBER	DATE OF MFG.
1 Ton Utility Truck	180 hp	Chrysler	Flat Bed	1B7KD34WOES348454	1984
Motor Grader	240 hp	Caterpillar	14H	72V11972	1989
4WD Pickup Truck	150 hp	Ford	½ Ton	2FTEF14NXPCA32022	1993
Tornado Tub Grinder	285 hp	Tornado	HD6	181590353A	1987
14 CY Dump Truck	250 hp	International	S-2500	1HTZPJURIHHA23520	1987
Compactor	340 hp	Caterpillar	826-G	AYH00633	2004
Compactor	340 hp	Caterpillar	826	7LN00363	1998
Water Truck	250 hp	Ford	Tanker	A90AVFA7277	1978
5 YD Loader	253 hp	Caterpillar	966F	4YGO1302	1993
Scraper Auger	249 hp	Caterpillar	627E	IDL00517	1998
Dozer	305 hp	Caterpillar	D8R	7XM03295	1998
Backhoe	90 hp	Case	580	JJG0171690	1985

ATTACHMENT "D": REPORTING FORMAT FOR WASTE DISPOSAL SITE

Air Quality Control Permit No. 36194
For
City of Flagstaff – Cinder Lake Landfill

A. SOURCE INFORMATION

1. **Identification/Location** - Indicate the name and address of source:

   Source Name: _____

   Street Address (Location): _____

   City Name/State/Zip Code: _____

   State Registration Number: _____ SIC_____

2. **Contact** - Indicate the name and telephone number of the owner or operator or other responsible official whom EPA may contact concerning this report.

   Name: _____

   Telephone Number: _____

3. **Source Description** - Briefly state the nature of the source (e.g., Waste Disposal Site)

   Description:_____

4. **Alternative Mailing Address** - Indicate an alternative mailing address if correspondence is to be directed to a location different than that specified above.

   Street or Box Number: _____

   City/State/Zip Code: _____

5. **Compliance Status** - The emissions from this source ___can ___cannot meet the emission limitations contained in the National Emission Standards on or prior to 90 days after the effective date of any standards or amendments which require the submission of such information.

_____ _____
Signature of Owner, Operator or Other Responsible Official Date

Note: If the emissions from the source will exceed those limits set by the National Emission Standards for Hazardous Air Pollutants, the source will be in violation and subject to Federal enforcement actions unless granted a waiver of compliance by the Administrator of U.S. EPA.

B. ASBESTOS WASTE DISPOSAL SITE

1. **Description** - Provide a brief description of the site, including its size and configuration, and the distance to the closest city or town, closest residence, and closest primary road.

   DISTANCE TO:

   TOWN:_____ _____KILOMETERS

   RESIDENCE:_____ _____KILOMETERS

   PRIMARY ROAD:_____ _____KILOMETERS

2. **Inactivation** - After the site is inactivated, indicate the method or methods used to comply with the standard and send a list of the actions that will be undertaken to maintain the inactivated site.

C. COMPLIANCE METHOD/INACTIVE SITE

Regional Offices to Submit Report to:

U.S. EPA Region IX
NESHAP Coordinator
Attn: Bob Trotter (A-3-3)
75 Hawthorne Street
San Francisco, CA 94105
(415) 744-1145

Arizona DEQ/AQD
NESHAP Coordinator
Attn: Tracy Neal
1110 W. Washington
Phoenix, AZ 85007
(602) 771-2333